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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF
SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1952

ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1952

ELMER E. ROBINSON

MAYOR

THOMAS A. BROOKS

CHIEF ADMINISTRATIVE OFFICER

SHERMAN P. DUCKEL

DIRECTOR OF PUBLIC WORKS



NORTH POINT SEWAGE TREATMENT PLANT

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MAYOR
ELMER E. ROBINSON

**CHIEF
ADMINISTRATIVE
OFFICER**
THOS. A. BROOKS

ORGANIZATION CHART

DEPARTMENT OF PUBLIC WORKS

JUNE 30, 1952

CITY AND COUNTY OF SAN FRANCISCO

DIRECTOR
SHERMAN P. DUCKEL

**ASST. DIRECTOR
ADMINISTRATIVE**
F. W. MCKENZIE

**ASST. DIRECTOR
MAINT. & OPERATION**
L. J. ARCHER

BUREAU OF ENGINEERING
CITY ENGINEER RALPH G. WADSWORTH

BUREAU OF BUILDING INSPECTION
SUPERINTENDENT LESTER C. BUSH

BUREAU OF ARCHITECTURE
CITY ARCHITECT DODGE RIEDY

GENERAL OFFICE

BUREAU OF STREET REPAIR
SUPERINTENDENT W. S. MERRILL

BUREAU OF ACCOUNTS
SUPERVISOR (Acting) J. J. McCLOSKEY

BUREAU OF SEWER REPAIR
SUPERINTENDENT E. F. MUHEIM

CENTRAL PERMIT BUREAU
SUPERVISOR S. J. ROSENBLUM

BUREAU OF BUILDING REPAIR
SUPERINTENDENT H. H. HANSSEN

BUREAU OF STREET CLEANING
SUPERINTENDENT W. T. BONSOR

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

OFFICE OF THE
DIRECTOR OF PUBLIC WORKS

260 CITY HALL
SAN FRANCISCO 2
CALIFORNIA

October 10, 1952

Annual Report
1951-1952

Honorable Thomas A. Brooks
Chief Administrative Officer
City and County of San Francisco

Dear Sir:

In accordance with the provisions of Section 20 of the Charter of the City and County of San Francisco, I herewith transmit the Annual Report of the Department of Public Works for the fiscal year ending June 30, 1952.

As indicated by this report the past year has again proved to be a very busy one for this department. The maintenance and Operating Bureaus carried on an increased work program with no increase in employments, while in the Bureau of Sewer Repair a reduction in the staff was effected. The Design and Construction Bureaus continued to meet their schedules and in spite of the lack of sufficient qualified technical help have maintained a heavy work program.

With the completion of the North Point and the Southeast Sewage Treatment plants the Bureau of Engineering has been able to devote more design time to our sewer and highway programs. The street and highway program has therefore been accelerated and a large number of important projects are now completed or under construction. The streetcar track removal program is now nearly 70 per cent completed.

The balances remaining in the various street and sewer bonds funds, as of July 1, 1952, are approximately as follows:

1944 Sewer Bonds	\$ 2,692,000
1947 Street and Highway Bonds	12,300,000
1948 Sewage Treatment Bonds	3,883,000

The \$6,500,000 available in the Sewer and Sewage Treatment Bond Issue will be expended during 1953 and, if the department is to continue its correction of existing sewer deficiencies, a new bond issue of approximately \$10,000,000 will be required during 1953.

The Bureau of Architecture, during the fiscal year 1951-1952, had under its jurisdiction approximately \$40,000,000 of work in various stages of completion and planning. The status of the School Bond Program, as of June 30, 1952, was approximately as follows:

Construction completed	\$ 6,205,000
Construction under way	14,915,000
Plans completed	1,521,000
Planning under way	14,442,000
	\$37,073,000

In addition to the large school program, projects have been completed for the Police, Library, Fire, Health departments and others.

Studies for revision of the 1948 Building Code are under way and it is believed that they will be completed for submission to the Board of Supervisors in the latter part of 1952.

On October 1, 1951, the four Operating and Maintenance Bureaus, together with the Bureau of Accounts, moved to their new quarters at 2323 Army Street. The new yard, with its Administration and Shop Buildings, was constructed at a cost of \$763,000. It replaced the old wooden quarters occupied for 46 years at 11th and Bryant Streets, whose demolition was required to clear the right of way for the 13th Street widening and viaduct.

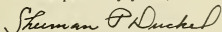
Early in January 1952, the Municipal Government Survey Advisory Committee submitted a 'Report on a Study of the Department of Public Works,' prepared by its consultants Griffenhagen

& Associates. The report was a good one and contained many fine recommendations to improve the efficiency and the economical operation of the department. A number of the recommendations which involved no cash outlay have already been put into effect. Those that required the expenditure of any funds could not be adopted as all of our requests for additional help or equipment were deleted from our budget recommendations. I believe that the small initial outlay of monies will result in substantial savings to this department and it is hoped that favorable consideration by the Mayor and Board of Supervisors will be forthcoming next year.

All bureau heads and their staffs have performed their duties ably and well during the past year, and this is greatly appreciated by me.

I am again indebted to Ralph G. Wadsworth, City Engineer, who supervised the preparation of this report.

Respectfully yours,

A handwritten signature in cursive script, reading "Sherman P. Duckel". The signature is written in dark ink and is positioned above the printed name and title.

Sherman P. Duckel, Director
Department of Public Works

BUREAU OF ENGINEERING

DEPARTMENT OF PUBLIC WORKS

ORGANIZATION CHART

JUNE 30, 1952

CITY ENGINEER
ASS'T CITY ENGINEER

STAFF DIVISIONS

CONTRACT
ADMINISTRATION
PAYMENTS-RECORDS

OFFICE
MANAGEMENT
PERSONNEL-PURCHASING

LINE DIVISIONS

DIVISION OF STREETS & HIGHWAYS

- 1-STREET IMPROVEMENTS
 - (a) IMPROVEMENT PLANS
 - (b) ASSESSMENTS
 - (c) PERMITS & INSPECTIONS
- 2-HIGHWAYS
- 3-TRACK REMOVAL CONTRACTS
- 4-PLANS & RECORDS

DIVISION OF DESIGN

- 1-STRUCTURAL
- 2-SEWERS
- 3-SEWAGE DISPOSAL &
MECHANICAL
- 4-ELECTRICAL
- 5-UNDERGROUND STRUCTURES
- 6-ADMINISTRATIVE & CONTRACTS
- 7-SPECIFICATIONS

LINE DIVISIONS

DIVISION OF TRAFFIC ENGINEERING

- 1-DESIGN
- 2-OPERATION
- 3-MAINTENANCE

DIVISION OF SURVEYS & MAPPING

- 1-STREET GRADES
- 2-SUBDIVISIONS
- 3-SURVEYS

LINE DIVISIONS

DIVISION OF CONSTRUCTION

- 1-INSPECTION
- 2-TESTING LABORATORY
- 3-SANITARY FILL
- 4-RECORDS REPORTS

DIVISION OF SEWAGE & WASTE TREATMENT

- 1-RICHMOND SUNSET PLANT
- 2-NORTH POINT PLANT
- 3-SOUTHEAST PLANT
- 4-INVESTIGATIONS

BUREAU OF ENGINEERING

Ralph G. Wadsworth, City Engineer

FUNCTIONS OF THE BUREAU

The work of the Bureau of Engineering falls into three main classifications, namely; (1) general engineering planning and service, (2) operation of the sewage treatment plants, and (3) planning and supervising of construction and certain types of maintenance. Activities under the first two classifications are of a continuing nature and are financed by general tax fund appropriations. The engineering work in the last classification consists of the preparation of plans and specifications for public improvements, supervision of contract work in the field, and general supervision of traffic control devices. It is financed from various funds appropriated for specific projects. Most of the work is performed for the Department of Public Works but occasional projects are undertaken for other City departments.

GENERAL REVIEW OF YEAR'S WORK

In general the work of the Bureau continued at about the same level as during the preceding year. Special attention was devoted to completion and testing of two new sewage treatment plants and organizing the operating staffs for them. All available engineering man power was used in continuing the development of additional construction work, and somewhat more than the usual amount of design work was performed for departments other than the Department of Public Works.

GENERAL ENGINEERING WORK

The Bureau handled all procedures in connection with street assessments, made regular inspections of streets and sidewalks, inspected all work performed in streets by utility companies, investigated proposals for opening and closing streets and permitting encroachments, made preliminary surveys for street improvement projects, reviewed new sub-divisions, maintained maps and records for public information, investigated damage claims and made numerous general studies and investigations. The Bureau also inspected work at the sanitary fill utilized for garbage disposal and operated a testing laboratory providing various kinds of tests of numerous materials for a large number of City departments.

SEWAGE TREATMENT PLANT OPERATION

The North Point and Southeast sewage treatment plants were completed during the year and the operating forces were expanded

during the first half of the fiscal year to nearly full force. Some additional men will be needed when the treatment facilities at the Southeast Plant are placed in operation. Commencement of operation of these facilities is awaiting completion of the influent and effluent sewers and the first units of the sewage collecting system. Tests of shore waters have indicated that the operation of the North Point Sewage Treatment Plant has already produced a substantial improvement in the quality of shore waters along the northerly margin of the City.

CONSTRUCTION PROGRESS

Contracts were awarded for a wide variety of projects, under the jurisdiction of the Department of Public Works, including highways, streets, sewers, traffic signals and other improvements. Contracts undertaken for other City departments included two extensions of the High Pressure Fire System, additional improvements at the Farmers' Market and road improvements at the Log Cabin Ranch of the Juvenile Probation Department.

Some of the more important projects for which contracts were awarded during the year are listed below, followed by the date of the award.

Bryant Street Viaduct to open up a new roadway from Second Street to Beale Street and The Embarcadero September 21, 1951

Monterey Boulevard reconstruction between Ridgewood Ave. & San Anselmo Avenue including a retaining wall between the separated roadways September 14, 1951

Sloat Boulevard Widening and construction of a center island from Junipero Serra Boulevard to Great Highway, including signals and channelization at St. Francis Circle October 6, 1951

Guerrero Street and San Jose Avenue reconstruction and widening between Army and Randall Streets December 7, 1951

Traffic Signals and Channelization 3rd and Berry Streets July 6, 1951

36th Avenue Sewer from Sloat Boulevard to Vicente Street (to prevent flooding of Lakeshore District) October 24, 1951

Lake Street Sewer Extension Section C (to prevent flooding in Laurel Heights tract) December 28, 1951

Two major sewers in collecting system for September 21, 1951 Southeast Drainage District and November 21, 1951

LOCATION OF CONTRACTS AWARDED

FISCAL YEAR 1951-1952

LEGEND

- STREET WORK
- ++++ TRACK REMOVAL
- SEWER
- xxxxxx HIGH PRESSURE LINE
- TRAFFIC SIGNAL
- ▲ OTHER PROJECTS



Descriptions of these and other projects will be found in later sections of the report and locations of all projects are shown so far as possible on the accompanying map.

CURRENT CONTRACT DATA

The following tabulation shows the number and value of contracts awarded during the fiscal year 1951-1952 in each of the main categories of construction work. The tabulation also shows the total value of the work actually performed during the year on all contracts which were active, including those awarded but not completed in preceding years.

A detailed listing of the contracts under way during the year will be found in Appendix I. A separate tabulation is given for each of the categories of construction work, the various tables being designated by the letters and figures shown in the first column of the following summary.

CURRENT CONTRACT DATA SUMMARY SHOWING ALL CONTRACT WORK AWARDED OR UNDER WAY JULY 1, 1951 To JUNE 30, 1952

Table	Type of Construction	No.	Contracts Awarded Aggregate Value	Amount Expended Fiscal Year 1951-52
A	Major Thoroughfares	7	\$ 1,244,677.63	\$ 953,818.12
B-1	Streets-Private Contracts	28	381,557.00	401,778.00
B-2	Streets-Assessment Proceedings	26	159,603.00	131,673.31
B-3	Streets-Public Con- tracts City Pay	8	81,846.87	90,572.99
B-4	Street Car Track Removal	6	1,139,304.61	1,099,187.74
C	Traffic Signals and Channelization	8	195,834.52	146,358.28
D-1	Sewers, Pipe-Vitrified Clay and Concrete	5	354,849.42	418,459.55
D-2	Sewers-Concrete Monolithic	2	453,150.00	553,451.09
E-1	Sewage Treatment Plants	0	-	3,050,909.43
E-2	Miscellaneous	23	436,002.60	3,532,608.16
TOTALS		113	\$4,446,825.65	\$10,378,816.67

The total number of contracts and the total aggregate value of them were somewhat less than the previous year. A total of 113 contracts and street improvement permits were authorized, having a total value of \$4,446,825.65. Total expenditures on construction projects amounted to \$10,378,816.67. The difference between this amount and the value of contracts awarded is largely accounted for by large expenditures on the sewage treatment plants and the Broadway Tunnel, which had been undertaken in preceding years.

CONSTRUCTION FUNDS

State gas tax funds are the principal support of the normal street and highway construction program. Bond funds are being used for removal of street car tracks, a portion of the traffic signals and the Broadway Tunnel. Sewers and treatment plants are being built principally from bond funds supplemented by State aid and limited amounts of general tax funds. Balances still available in the several bond funds on June 30, 1952 were approximately as follows:

Sewer Bonds of 1944, available for extension and enlargement of main sewers	\$ 2,692,425.50
Street Improvement Bonds of 1947, available for track removal, traffic signals and other major thoroughfare improvements	12,300,000.00
Sewage Treatment Bonds of 1948, available for treatment plants and collecting sewers	3,882,543.37
State Gas Tax funds on hand and available for street improvements	11,500,000.00

Total gas tax allocations received by San Francisco for major streets and for county roads amount to about \$5,000,000 annually. Of this amount nearly \$3,000,000 is required regularly for maintenance, leaving about \$2,000,000 available annually for new construction.

ADMINISTRATION OF THE BUREAU

ORGANIZATION

As indicated by the organization chart at the beginning of the report of this bureau, the organization of the staff has been changed only slightly since the preceding year. All of the line divisions are exactly the same. Of the two former staff divisions, the Administration Division has been divided into two parts, one designated Contract Division and the other Office Management Division. The former Programs and Budgets Division has been eliminated and its functions distributed elsewhere.

It will be noted that the present staff of the Bureau consists of eight divisions under the City Engineer. The Assistant City Engineer assists in general supervision and also acts as head of the Division of Streets and Highways. The following list shows the names of the persons who were in charge of each division, section and unit as of June 30, 1952. Functions remain as shown in detail in the preceding annual report on pages 13 to 16 inclusive.

Supervisory Personnel
As of June 30, 1952

Division, Section and Unit	Person in Charge
DIVISION OF STREETS AND HIGHWAYS	C.J. Geertz, Asst. City Engr.
Street Improvement Section	M.H. Levy, Engineer
Improvement Plans Unit	C.C. Clifton, Assistant Engr.
Assessment Unit	L.C. Whaley, Assistant Engr.
Permit and Inspection Unit	C.S. Hiden, Assistant Engr.
Highway Section	N.F. Newman, Engineer
Track Removal Section	E.J. Sierra, Engineer
Plan and Record Section	H.L. Reinfeld, Engineer
DIVISION OF DESIGN	R.H. Owens, Senior Engineer
Structural Section	N.F. Yde, Engineer
Sewer Section	R.F. Lauenstein, Engineer
Sewage Disposal and Mechanical Section	M. Anaya, Engineer
Electrical Section	Ivan Sandberg, Engineer
Underground Structure Section	W.R. Daly, Senior Draftsman
Specifications Section	Stanley C. Gerughty, Assistant Engr.
Administrative Section	G. Galli, Engineer
DIVISION OF TRAFFIC ENGINEERING	Ross T. Shoaf, Engineer
Operation Section	Charles M. Lang, Assistant Engr.
Design Section	William Marconi, Assistant Engr.
Maintenance Section	James W. Challis, Assistant Engr.
SURVEYS AND MAPPING DIVISION	E. J. Cullen, Engineer
CONSTRUCTION DIVISION	John D. Roberts, Senior Engineer
Testing Laboratory Unit	P.F. Bernard, Engineering Chemist
DIVISION OF SEWAGE AND WASTE TREATMENT	Ben Benas, Senior Engineer
North Point Sewage Treatment Plant	Keeno Fraschina, Sup't.
Southeast Sewage Treatment Plant	John Crafts, Sup't.
Richmond-Sunset Sewage Treatment Plant	Benn Martin, Sup't.
CONTRACT ADMINISTRATION DIVISION	John Fiacsan, Engineer
OFFICE MANAGEMENT DIVISION	Wesley J. McKee, Head Clerk

John L. Slater, Engineer, was assigned to the Police Department to assist the Director of Traffic.

PERSONNEL

The total staff of the Bureau increased from 263 to 327 during the year, a gain of 64 employees. The following table shows assignment of employees at the beginning of the year to the five major groups, comprising the staff.

Personnel at Beginning and End of Fiscal Year

Division	July 1, 1951	June 30, 1952	Increase
Design and Administrative			
Divisions	113	122	9
Construction Division (Field)	60	49	-11
Survey Division (Field & Office)	35	35	-
Clerical Staff	25	27	2
Plant Operation Force	30	94	64
TOTALS	263	327	64

It will be noted that the increase in personnel was entirely due to the expansion of the plant operation force which accompanied the putting into operation of the new sewage treatment plants.

PAYROLL

The source of funds for payment of salaries and the number of employees paid from each at the end of the year are as follows:

	Employees End of Year	Total Payroll
General Fund (Budget Payroll)		
General Engineering	60	\$ 324,557.01
Treatment Plant Operation	94	302,426.71
Total Budget Payroll		\$ 626,983.72
Project Funds - Various Sources (Interdepartmental Payroll)	162	898,612.50
TOTALS	316	\$ 1,525,596.22

RETIREMENTS AND DEATHS

The following members of the staff retired or died after many years of meritorious service:

			Length of City Service
Leo Glick	Retired	6-30-52	Engineer 40 years
Leo Pope	"	6-30-52	Jr. Engineer 26 years
Alfred V. Bowhay	Died	9-25-51	Engineer 35 years
George W. Purser	"	2- 7-52	Engineer 38 years

SEWAGE TREATMENT PLANT CONSTRUCTION

Construction of the City's new sewage treatment plants, as authorized by the Bond Issue of 1948, was completed during the fiscal year. The work was performed under five major contracts, three applying to plant construction, one to the North Point Influent and Effluent Sewers and one to a cross-town sludge line, the aggregate cost being \$17,108,399.16. Construction of intercepting and collecting sewers was started but a large amount of additional work must be undertaken and completed before the treatment plants will be operating at full capacity.

The North Point plant on Bay Street near The Embarcadero, including the influent and effluent sewers, was accepted in December 1951, the final construction cost being \$9,880,379.78. The Southeast plant near Islais Creek consists of two main parts - the sewage treatment facilities for the Southeast sewerage district (formerly referred to as the Southeast Sewage Treatment Plant) and the sludge digestion and drying facilities for all plants in the City (formerly referred to as the North Point Sludge Treatment Plant). This plant receives sludge from North Point by pumping through the North Point Sludge Main and filter cake from the Richmond-Sunset plant by truck haul. Treatment plant locations are shown on the accompanying map.

NORTH POINT SEWAGE TREATMENT PLANT

The plant contains facilities for the primary treatment of sewage from the northeasterly portion of the City. It is designed for a normal flow of 65 million gallons daily and a maximum flow of 150 million gallons daily. The chlorinated effluent is discharged into the Bay through four 48-inch cast iron pipes terminating near the ends of Piers 33 and 35. Treatment consists primarily of pre-chlorination for odor control, removal of screenings and grit, pumping, pre-aeration, primary sedimentation and post chlorination. The plant contains the facilities listed below.

NORTH POINT PLANT FACILITIES

Chlorine Storage Yard - Spur tracks and provision for unloading tank cars.

Pretreatment Building - Houses influent control gates, hand and mechanical operated bar racks, grit removal tanks and grit removal equipment, ventilating equipment, chlorination equipment and electric control station. 79' x 128', four stories and pent house.

Gate House - Houses four gates for flow control at effluent end of grit tanks. 20' x 50', two stories.

Administration Building - Houses offices, laboratories, shower and locker rooms, boilers, five main sewage lift pumps, sumps, ventilating equipment and main electric control station. 80' x 205', four stories and pent house.

Receiving Structure - Provision for receiving and distributing sewage from sewage lift station to each of two sedimentation buildings. 27' x 69', one story.

Pre-aeration and sedimentation Buildings (2). Houses air flocculation and sedimentation tanks and equipment, including air diffusers, sludge controllers grease and scum removal equipment, effluent water system and pumps, regulating gates and ventilation equipment. Each 119' x 350', three stories.

Grease and Scum Building - Houses grease and scum pumps. 32' x 36', two stories.

Sludge Control Building - Houses main effluent gate, sludge pumps, chlorine diffusers, effluent filters and equipment, ventilation equipment and electric control station. 38' x 74', four stories.

Post Chlorination Building - Houses dewatering and sampling pumps, skimming trough, chlorinator converters, vortex holding tank. 65' diameter, two stories.

Garage and Repair Shop - Houses water systems, storage and repair facilities. 50' x 155', one story.

SOUTHEAST SEWAGE TREATMENT PLANT

The sewage treatment facilities of this plant are designed for an average sanitary flow of 30 million gallons daily and a peak flow of 70 million gallons daily during the light rains. The chlorinated effluent will be discharged into Islais Creek. The sludge treatment facilities provide for digestion, elutriation, dewatering and dehydrating of sludge collected from the North Point and Southeast sewerage districts, and will also dehydrate the filter cake from the Richmond-Sunset plant. The plant contains the facilities listed below.

SOUTHEAST PLANT FACILITIES

General Facilities

Administration Building - Houses offices, laboratory, and shower and locker rooms, etc., 50' x 175', three stories.

Machine Shop and Garage - 60' x 95', one story.

Sewage Treatment Facilities

Headworks Building - 65' x 180' x 65' maximum height, houses influent flow control gates, 2 hand and mechanically cleaned bar screens, 2 mechanically cleaned grit tanks and the raw sewage pump sump and sewage lift pumps.

Sedimentation Tanks - 2 buildings each with 2 aeration sedimentation tanks 38' wide by 260' long and 10' deep equipped with plate aerators and straight line collectors carrying sludge to the discharge end of the tanks. The tanks are housed in a concrete structure with roof 14' above the walkways.

Sludge Control Building - a two-story building 30' x 55' housing sludge wells and sludge pumps and the return elutriation overflow sumps and elutriation pumps. Elutriation overflow is received from the sludge treatment facilities.

Chlorination Building - a one-story building housing chlorinators for pre and post-chlorination with outside storage tanks for carload deliveries.

Sludge Treatment Facilities

Digesters - 10, each 100' in diameter and 33' high with steel floating covers, in 2 groups of 5 each (3 primaries and 2 secondaries).

Gas Holder - 56' in diameter and 20' high with steel gas holder cover.

Digestion Control Buildings - 2 each 70' octagonal, two stories, housing sludge pumps and external heat exchangers.

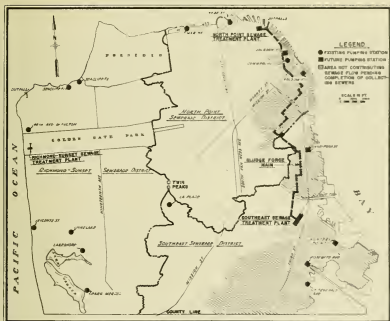
Receiving and Thickening Building - 63' x 124', two stories, housing 2 receiving and thickening tanks approximately 21' by 91' by 12' deep and sludge pumps.

Filtration Building - 99' x 154', two stories, housing 4 primary and 4 secondary elutriation tanks approximately 16' x 61' x 11' deep, sludge pumps, four 8' diameter by 14' long vacuum filters and appurtenant equipment.

Dryer Building - 197' x 54', three stories, housing 3 Raymond Dryers rated at 6250 lbs. of water per hour and dried sludge storage, pelleting and sacking equipment.

Electric Substation and Filter Cake Receiver - 25' x 115' one story.

The sewage treatment facilities at the Southeast plant can not be placed in operation until the initial program of influent sewers is completed. Several major sewers in this system were started during the last fiscal year, but because of strikes and other delays they were not completed. Reference is made to the collecting sewers in a later section of the report.



SEWAGE DISPOSAL SYSTEM

Showing Districts, Pumping Stations and Treatment Plants



SOUTHEAST SEWAGE TREATMENT PLANT

Sludge Treatment Facilities in Foreground
Sewage Treatment Facilities in Background

SEWER CONSTRUCTION

Seven sewer construction contracts were awarded during the year as listed in Tables D-1 and D-2 of Appendix I. Two of the contracts were for units of the Southeast Collecting Sewers System. The aggregate price of the seven contracts was \$807,999.42. In addition, a number of major sewers were constructed in conjunction with other types of contracts under the jurisdiction of this Department. Much pipe sewer construction was also done under the highway and street contracts listed in Appendix I, Table A and Tables B-1 to B-4.

LAKE STREET SEWER SYSTEM

Section C of this System was brought close to completion by a third contract during the year. This leaves only Section D, along Arguello Boulevard south from Geary Boulevard, to be built in the future. Section C runs from Spruce and California Streets via Parker Avenue to Euclid Avenue and Arguello Boulevard.

SLOAT BOULEVARD AND 36th AVENUE SEWERS

Construction was started, and almost completed during the year, on storm relief sewers in Sloat Boulevard and in 36th Avenue and Sunset Boulevard running from Springfield Drive to Vicente Street. These sewers were built to avoid a recurrence of the flooding of Springfield Drive which occurred in the fall of 1950.

SOUTHEAST INFLUENT AND EFFLUENT SEWERS

Four contracts for units of this System were under way at the end of the year. These contracts include: Section A-1, the 5'-6" west influent sewer on piles from the head of Islais Creek to the Southeast Sewage Plant; Section A-2, the 6'-0" effluent sewer on piles from the plant to Islais Creek with a temporary outlet under the State Wharf and the 15" influent line from the Third Street diversion structure south of Islais Creek; Sections B-1, 2 and 3 covering diversions at the overflow structures of the Selby and Marin sewers into Islais Creek and a connecting sewer between the structures; and Section E-1, the 6'-0" east influent sewer from Mendell Street and Fairfax Avenue to the plant.

MISCELLANEOUS SEWERS

A 30" concrete pipe sewer on piles was built in Marin Street, between Illinois and Michigan Streets, to handle the

sewage from the extensive industrial development of the Western Pacific Railroad, north of Islais Creek. Also of interest is the 15" sewer that was built through an easement in the Southern Pacific Company's Bayshore Yard as a result of an agreement with that Company. This sewer now carries City sewage from Tunnel Avenue, which for many years had flowed through an old private drain built and maintained by the Company.

SEWERS INCLUDED IN STREET CONSTRUCTION

Sewers were constructed under street and miscellaneous contracts at the following locations:

State Highway Route No. 56 through Golden Gate Park
Bryant Street Viaduct
Monterey Boulevard Widening
Guerrero Street and San Jose Avenue Widening
Sloat Boulevard Reconstruction
Phelan Avenue Widening
O'Farrell Street, Pierce to Steiner (Track Removal)
24th Street, Hoffman to Homestead (Track Removal)
Ocean Avenue, Victoria to Manor (Municipal Railway Contract)

SEWER PLANS AND ASSISTANCE FOR OTHER DEPARTMENTS AND AGENCIES

Sewer plans of the San Francisco Housing Authority's Alemany Project were reviewed and plans for additional City sewers through the Project were prepared. These are to be built by the Authority at the City's expense under a pending agreement.

Problems in connection with sewer service for new schools and the interference of such sewers with the existing sewers were worked out for the School Department. Sewer studies were also made in connection with the Diamond Heights Project of the Re-development Agency, as well as its Western Addition Project.

State Highway sewer plans for Bayshore Freeway were reviewed for conformity with the City sewer pattern and requirements, and modifications were developed to avoid interference of pier footings with the City sewers.

Technical assistance was afforded the City Attorney's Office in connection with suits for damages attributed to faulty sewers.

The sewer and drainage plans for new subdivisions were checked and approved. These included Stonestown Commercial Area, Midtown Terrace No. 2, Lawton Heights, Dalewood, Lake Shore Country Club Acres and others.

FUTURE SEWER CONSTRUCTION

Under this heading in last year's report, on page 25, the foreseeable future sewer construction needs of the City were reviewed and a tabulation of the several types of projects, with costs, was shown. The total estimated cost was stated to be \$17,540,000. Though the availability of funds was not mentioned, only about \$7,500,000 was on hand. This money had been allocated, in order of urgency, to the projects that were specifically contemplated in the 1944 and 1948 Sewer and Sewage Treatment bond issues. The indicated deficiency was \$10,000,000.

Further consideration of the future program became necessary as a result of last winter's heavy rainfall of 32.56 inches, which was exceeded only eight times since records were begun in 1849. The intensities exceeded the Grunsky design curve of 1908, (2.16 inches per hour for 5 minutes) on three occasions, namely; December 1, 1951 and January 12 and 14, 1952. None of them, however, exceeded the present curve (3.13 inches per hour for 5 minutes) adopted in 1941. Nonetheless, flooding of several streets during the winter made it apparent that some of the jobs in the program which were being held over for future financing were already of pressing urgency and, also, that new weak spots in the existing sewer system had been revealed.

In the former category are the sewers in Sloat Boulevard and 36th Avenue, the third unit of the Lake Street C sewer, the Mendell sewer extension, and reconstruction and enlargement of sewers in 14th Street, Silver Avenue, El Camino Del Mar and Bluxome Street, totaling close to \$1,000,000. In the second category are the reconstruction of the Castenada Avenue to Laguna Honda Boulevard sewer which was washed away causing damage to the slope and adjoining property, the enlargement of the Parnassus Avenue sewer to prevent a recurrence of serious flooding of the new extension of the U.C. Hospital, a new sewer to supplement Division Street storm sewer and sewer reconstruction at Burritt Place, totaling about \$700,000.

The urgency of the above named jobs warranted priorities above the less pressing bond issue projects. Efforts to secure general fund appropriations were unsuccessful and consequently available bond funds have been or will be allocated to these jobs as a loan, pending a new bond issue or other financing. Similar provision has been made for financing a new main sewer to serve the Sunset-Sloat-Skyline area, as well as an urgent sewer in Clarendon Avenue. These two sewers, which will cost some \$350,000, are needed now to serve new major subdivisions which are already under construction. Since they were previously contemplated, the only addition to last year's over-all program is the \$700,000 for new projects outlined above. This increases the deficit in the required sewer funds to \$10,700,000. Financing by means of a future bond issue is under consideration.

STREET AND HIGHWAY IMPROVEMENTS - CITY FINANCED

Twenty-three street and highway improvement contracts totaling \$2,743,390.11 were awarded during the 1951-1952 fiscal year. The smallest contract was \$2,965.00 for the erection of a guard rail along a dangerous section of Silver Avenue and the largest was \$458,428.90 for removal of abandoned street car tracks and the reconstruction of the pavement on Turk Street and Eddy Street between Market and Divisadero Streets. These contracts included widening and channelizing of main traffic arteries, removal of abandoned street car tracks, construction of a viaduct to eliminate a road block created by a precipice on Bryant Street at First Street, resurfacing of old pavements, and several street reconstruction projects. Financing for these contracts was provided mainly from gas tax funds and bond proceeds. The various contracts are listed in Appendix I, Tables A, B-3, B-4 and E-2.

HIGHWAY IMPROVEMENT PROJECTS

Five contracts costing \$1,199,231.10 were awarded during the year for highway improvements. All provided for alteration of existing thoroughfares to facilitate safe and expeditious movement of large volumes of traffic. Only two, Phelan Avenue and Guerrero-San Jose, required acquisition of additional right-of-way.

Guerrero Street-San Jose Avenue Widening

This is the final unit of a project started in 1935 to provide a six lane divided highway between the 'Bernal Cut', now San Jose Avenue, and the then proposed Bayshore Freeway. The first units of the project carrying the widening of Army Street from Potrero Avenue to Guerrero Street, were completed in 1950. The last unit, will be completed in October 1952, well in advance of completion of the Bayshore Freeway now being constructed by the Division of Highways of the State of California.

Phelan Avenue Widening

The widening of Phelan Avenue between Ocean and Judson Avenues is the first unit of a project designed to provide a four lane feeder route from the Ingleside and Ocean View Districts to Monterey Boulevard, on which the motorist may choose either the San Jose Avenue-Army Street route or the Teresita Boulevard-Market Street route to the downtown business or industrial sections of the City.

Monterey Boulevard Widening

One of the major routes from the residential areas on the southwest slope of Mount Davidson to the downtown section is over Monterey Boulevard to the San Jose Avenue-Army Street route. From San Jose Avenue to Ridgewood Avenue, Monterey Boulevard has a 56 foot roadway, which amply accommodates four lanes of traffic. West of Ridgewood Avenue, however, the Boulevard consisted, in the main, of two single-lane roadways, constructed at different levels and separated by a wide, sloping, landscaped divider. In order to break the bottleneck created by these single lane roadways, a contract was awarded to construct a retaining wall in a four foot medial divider for about half the length of the project, a 6-foot divider where the roadways are to be at the same level and to provide roadways for the accommodation of two lanes of traffic in each direction. This work, now about 21% complete, is expected to be finished in November 1952.

Golden Gate Park Cross-Over

State Highway Route No. 56, which traverses the westerly section of the City, is one of San Francisco's most heavily traveled north-south thoroughfares. For the major portion of its length, the route has an ideal alignment with long tangents connected by large radius curves. In the portion through Golden Gate Park, two sharp curves have long presented a hazard because of restricted roadway width and inadequate super-elevation. This hazard is being eliminated by a contract, expected to be completed in August of this year, which will provide 3 eleven foot lanes in each direction with additional width and adequate super-elevation on the curves. The work includes a 4-foot medial divider, concrete curbs and gutters on both sides of each roadway, and a completely rehabilitated pavement.

Sloat Boulevard Widening

This project consists of utilizing a portion of the abandoned street railway right-of-way in the middle of the present highway to widen the roadway on either side by six feet. When completed in August of this year, three 12-foot lanes will be available for moving traffic in each direction, a 7-foot parking strip will have been retained at each side, left turn havens will be provided at crossings, and the remaining center island from St. Francis Circle to 39th Avenue will have been prepared for future landscaping. West of 39th Avenue the former railway right-of-way will be converted to a parking area to accommodate motorists visiting Fleishhacker Zoo and nearby recreation areas.



MONTEREY BOULEVARD



SLOAT BOULEVARD

BRYANT STREET VIADUCT

This structure is being built in Bryant Street between Second and Beale Streets, to overcome a physical barrier to traffic presented by a forty foot cliff. When completed, about November next, it will provide a sorely needed additional route to the San Francisco water front. As the viaduct is in a location to be occupied by an on-ramp from the Bayshore Freeway to the Bay Bridge, it was designed in cooperation with State engineers as an initial part of the future structure.

BROADWAY TUNNEL

Good progress was made during the fiscal year on the Broadway Tunnel contract awarded in February 1950 although there were short delays due to strikes of miners and carpenters. The North tunnel excavation was completed on January 14, 1952 and the South tunnel on June 6, 1952. The concrete lining was placed except for 124 feet at the West end of the South tunnel. Roadway pavement was placed in the North tunnel and for half the length of the South tunnel. The placing of interior tile in the North tunnel was about one-third finished. Work on ventilation buildings and equipment and the street work at the approaches was well advanced.

About 15% of contract work remained to be done at the end of the year consisting principally of the following items:

North tunnel:

- 2/3 of interior tile
- Lighting, utility lines, signals, telephones, etc.

South tunnel:

- 124 ft. of Type 'A' lining, West end.
- Grouting of all lining and setting of tile
- Roadway paving
- Installation of curb and utility trench
- Lighting, utility lines, signals, telephones, etc.

East Approach:

- 49 ft. of retaining wall on South side
- Curb, side-walk and pavement from portal to Powell Street
- Gunite finishing of retaining walls

West Approach:

- Gunite finishing of retaining walls

Ventilation Buildings:

- Air trap and skylight section, East building.
- Suspended ceilings, both buildings
- Completion of mechanical and electrical work



BROADWAY TUNNEL
Placing Arch Tile in North Tunnel



Removing Center Core
South Tunnel

Additional extra work was authorized during the year to cover a number of improvements and changes. The major change provided for thickening and reinforcing the roadway pavement in the tunnels to give greater resistance to possible inward movement of the side-walls. These changes, together with the much larger changes in approach cut retaining walls which were authorized in the preceding year, will bring the total construction cost to about \$6,200,000.

STANLEY DRIVE UNDERPASS

This structure, described in last year's report, is now open to traffic but will not be fully completed until July of this year.

MISSION VIADUCT

With the completion of this project in December 1951 the tremendous hazard created by the existence of the old viaduct piers in Alemany Boulevard was eliminated. A description of the work is contained in the report of last year.

STREET IMPROVEMENT PROJECTS

Ten contracts aggregating \$127,293.24 were awarded during the 1951-1952 fiscal year for street improvements of various types. Included in this category are contracts for initial street work in front of city-owned property, reconstruction of five blocks of brick pavement and one of basalt block pavement, resurfacing of 10th Street and Teresita Boulevard and the widening of Eucalyptus Drive, between 19th and 20th Avenues by reducing the width of sidewalks.

TRACK REMOVAL AND STREET RECONSTRUCTION

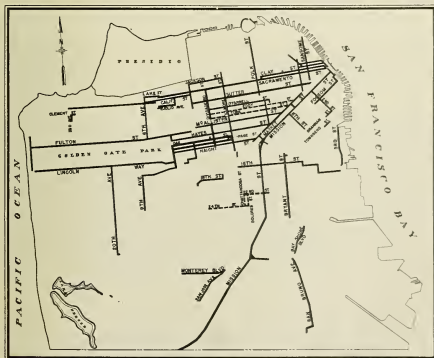
An accompanying map shows the track removal work completed or under way at the end of the year consisting of 69.43 miles of street work involving removal of abandoned tracks and rehabilitation of the pavement.

During the fiscal year six contracts were awarded aggregating 8.71 miles in length and \$1,139,304.61 in cost. This leaves 31.83 miles to complete the contemplated total of 101.26 miles.

The total cost of the work completed or under way will be about \$7,476,590. This represents 63% of the original estimated cost of the program and has financed 69% of the total mileage. Although the cost per mile increased during the last year, it is expected that the savings of previous years will off-set any future increase in costs and that the funds provided from the 1947 Street Improvement Bonds will be sufficient to complete the program.



STANLEY DRIVE UNDERPASS



TRACK REMOVAL PROGRAM
as of June 30, 1952
Solid lines - Work completed
Dash lines - Work under way

PLANS FOR FUTURE WORK

A number of street and highway improvement projects are scheduled for construction during the coming fiscal year and plans for many of them are approaching completion. The more important ones, in the approximate order in which they will be undertaken, are shown below together with estimated costs:

Third Street:	Market-Channel	Track Removal	\$114,000
Valencia Street:	McCoppin-Mission	Track Removal	243,000
Van Ness Avenue:	Market-North Point	Track Removal	399,000
Stanley Drive:	Junipero Serra-Aleman	Highway	184,000
Clay Street:	Arguello-Scott	Reconstruction	186,000
Potrero Avenue:	Alameda-Army	Resurface	50,000
Laguna Honda:	Dewey-Clarendon	Widen-Channelize	90,000
Clarendon Avenue:	Laguna Honda-Stanyan	Widen	185,000
Folsom Street:	3rd-Precita	Track Removal	410,000
Skyline Blvd.:	Lake Merced-County Line	Widen	200,000
13th Street:	Bryant-Mission	Widen	400,000
TOTAL			\$2,461,000

In addition to the above, studies will be made of the Mission Freeway and the Geary Expressway to gather data for the establishment of right-of-way lines and for estimation of required funds.



LANDSLIDE CAUSED BY SEWER FAILURE
 Note: temporary sewer from Castenada Avenue above to Laguna Honda Boulevard below

STREET IMPROVEMENTS FINANCED BY PROPERTY OWNERS

All street construction financed in whole or in part by the fronting property owners for which permits were issued or contracts were awarded during the fiscal year ending June 30, 1951 and also those which were authorized but not completed in the previous fiscal year are listed in detail in Appendix I, Table B-1 and B-2. Table B-1 covers street improvement projects performed under contracts negotiated directly between the property owners and a contractor, the City's only function being to grant permits, furnish the plans and inspect the construction work. Table B-2 covers the same class of work as in Table B-1 except that the contract is awarded by the City and the cost assessed against the property owners. In cases where the assessed value is very low, City financial aid is extended.

Twenty-eight permits for private contracts were issued covering work costing about \$382,000, which was about half the amount authorized in the previous year. Twenty-six contracts were awarded for work done under assessment proceedings, the number being the same as during the two preceding years.

Two contracts provided for construction of sidewalks at a total cost of \$6300. Notices were issued to property owners in January 1951 calling for the construction of 124,975 square feet of sidewalk. By August of that year, 65,427 square feet had been installed by owners and public contracts were prepared for the remaining 59,548 square feet. By the time the contractor started work, another 39,061 square feet had been completed by owners and only 20,487 square feet were thereafter placed by contract.

The following tabulations indicate the volume of work carried on during the year in connection with street improvement procedures under the San Francisco Street Improvement Ordinance of 1934.

Assessments and Bonds

Assessments issued for cost of street work	25
Cost of street improvements covered by assessments issued	\$203,057.64
Receipts for bond payments issued	66
Amount of bond payments collected	8,001.94

Street Work Proceedings

Resolutions of Intention passed	19
Street Improvement Projects recommended to the Board of Supervisors	18
Notices of Resolution of Intention mailed	265
Notices of Street Improvement posted	440

Ordinances ordering performance of street improvements passed	26
Proposals for street improvements published	28
Awards of Contract for street improvements	26
Notices of Recordation posted	394
Notices of Recordation mailed	489
Private contracts granted	28

Streets and highways in the City as of May 1, 1952 were classified as follows:

State Highways	30.83 miles
Major Streets	182.28 '
Other Improved Streets	583.29 '
Total Improved	796.40 '
Unpaved Streets	120.62 '
Total Dedicated	917.02 '

STREET DEDICATIONS AND CHANGES

Numerous actions taken by the City during the year with reference to subdivisions, street grades, sidewalk widths and street closings were based on investigations and recommendations of the Bureau of Engineering and in many cases involved preparation of specific descriptions by the Surveys and Mapping Division of the Bureau.

SUBDIVISION MAPS

The following tentative subdivision maps were received and reported on:

Lawton Heights Subdivision
 Lakeshore Country Club Acres Subdivision
 Crocker Amazon Highlands Sub'd of lots 29 and 30
 Dalewood Subdivision No. 1

Three subdivision maps - approved by the City Engineer and the Director of Public Works and filed in the Recorder's office are as follows:

Postel Heights Subdivision
 Midtown Terrace Subdivision No. 2
 Midtown Terrace No. 1 - Resubdivision of Lots 32 to 36 Block 2873 and Lots 7 to 12 Block 2874.

'A Record of Survey Map' of a portion of Parkmerced was also approved and filed for record.

STREET OPENINGS

Maps were approved and recorded providing for the opening, widening and extension of streets as follows:

Myra Way - from the San Miguel Rancho line westerly	widening
Lansdale Ave. - extension northeasterly	extension
Dalewood Way - extension southeasterly	extension
Dalewood Way - northerly from Sherwood Heights	
Subdivision	widening
Seventeenth and Clayton Streets intersection	widening
Ingerson Ave. and Gilroy St.	widening
Ignacio Ave. and Gilroy St.	widening
Buckingham Way in Stonestown	opening
Winston Drive in Stonestown	opening

STREETS VACATED

The following streets were vacated between the limits stated:

Ramsell Street	Sargent St. to 375' Northerly
Harkness Avenue	Delta St. to Dartmouth St.
Fremont Street	Brannan St. to Bryant St.
Goettingen Street	Mansell St. to Ordway St.
Eldorado Street	Michigan St. to Louisiana St.
Alameda Street	Illinois St. to Louisiana St.
Merrimac Street	Illinois St. to Michigan St.
Georgia Street	Eldorado St. to Fourth St.
Fourth Street	Michigan St. to Louisiana St.
Hollister Street	at Griffith St.
Thirty-second Street	at Sussex St.
Baldwin Court	275' N.W. of Folsom St.
Harkness Avenue	Delta St. to 425' northwesterly
Thirteenth Street	33.497' W. of Harrison St.
Bowdoin Street	Northwesterly of Harkness Ave.

To accomplish the opening of the streets shown on the tentative map of Twin View Terrace, submitted in November 1950, portions of the following streets were also vacated:

Twenty-fifth Street
 Twenty-sixth Street
 Clipper Street
 LaPlace Avenue
 Burnett Avenue
 Glenwood Drive

STREET GRADE CHANGES

Official street grades were changed on the following streets:

Hamilton Street
Colby Street
Olmstead Street
Mansell Street
Dartmouth Street
Parker Avenue
Dartmouth Street

Woolsey St. to Dwight St.
Dwight St. to Oneota St.
Dartmouth St. to University St.
Dartmouth St. to University St.
Woolsey St. to Dwight St.
Turk St. to Anza St.
Sly. Olmstead St. to Harkness
Avenue

STREET GRADES ESTABLISHED

New grades were established on the following streets:

Burnett Avenue

Hopkins Avenue northerly

SIDEWALK WIDTHS CHANGED

Changes in official sidewalk widths were ordered by the Board of Supervisors as follows:

Clement Street
Point Lobos Avenue
Juniper Street

32nd Ave. to 33d Ave.
42nd Ave. to 43d Ave.
Harrison St. to Bryant St.



PARKER AVENUE
After Reconstruction

TRAFFIC ENGINEERING

TRAFFIC SIGNAL INSTALLATIONS

San Francisco's first traffic actuated system in which the master controller is supervised by traffic itself was installed last year to replace a fixed-time system on Bayshore Boulevard from Arleta Avenue to Sunnysdale Avenue. In this system, a counting station located near the mid-point, counts traffic in both directions. Traffic is totaled every six minutes and the volumes are then analyzed by electronic equipment which in turn selects the proper traffic signal cycle. If there is a predominant flow in one direction, traffic signal timing favoring traffic in that direction is automatically put into operation. This arrangement, known as cycle offset selection, has been working effectively in handling very high volumes of highway traffic. It will be used in a number of future installations.

Elaborate and costly traffic signals were installed on Third Street at the intersections of Berry and Channel Streets, immediately to the north and south of the Channel Street Bridge. The design was complicated by reason of the restricted width of the bridge, heavy turning movements, a tremendous shipping development at Mission Rock Pier, and very high volumes of both truck and passenger-car traffic. The intersections, approximately 500 feet apart, are independently controlled by automatic traffic counters but can be manually controlled by the bridge operator in the event of a bridge lift.

TRAFFIC SURVEYS

Speed zone studies were made for the Police Department on Lincoln Way, which had a legal speed of 25 miles an hour on the south side and 55 miles an hour on the north side bordering Golden Gate Park. A posted speed limit of 35 miles an hour for both sides was recommended and the legislation was adopted by the Board of Supervisors. Traffic counts were made before and after the opening of the Stonestown shopping area at 19th Avenue and Winston Drive to determine the effect of opening day traffic on the adjoining highway. A special traffic count was made at Great Highway and Lincoln Way which is a wide open area without channelization. Proposed channelization was outlined in advance by rubber cones confining traffic into channels in order to permit an accurate count as well as to demonstrate the effectiveness of the proposed layout.

OFF-STREET PARKING

Two preliminary parking studies were made for the San Francisco Parking Authority. The larger was the Central Market

Street study in which it was found that a 1200 car garage would be economically practical in the block bounded by Third, Fourth, Market and Mission Streets. Since the demand for short-time parking in that area was extremely high, it was recommended that the Authority require a rate structure which would discourage more than two-hour parking. The second study was made in the North Beach area where it was found that a parking lot on Broadway would be self-supporting but a lot in the Columbus Avenue shopping area would require subsidizing by local merchants.

CHANNELIZATION

The first pedestrian fences in San Francisco were installed on the center islands of three heavily traveled streets in widely separated locations: Sloat Boulevard opposite the Zoo; Townsend Street between Third and Fourth Streets; and Junipero Serra Boulevard for about 300 feet north of Ocean Avenue. While some early opposition was encountered, the installations have had general public acceptance.

In connection with Sloat Boulevard improvement, a ruling of the City Attorney was requested by the Board of Supervisors on the legality of extending a center island across intersecting streets. His ruling was that a center island is a traffic control device and, if approved by the Police Department, can be installed without special legislation in any manner required.

TRAFFIC PLANNING STUDIES

Important traffic planning work was done in connection with the proposed freeway design under way by the State Division of Highways, particularly in regard to Bayshore Freeway ramp connections and the proposed Embarcadero Freeway alignment. Other planning studies were undertaken for the Redevelopment Agency in connection with traffic facilities in the Diamond Heights area. Efforts to devise means of increasing traffic capacity on Potrero Avenue, during adjacent freeway construction, resulted in a skip-stop system for buses between Division and Army Streets. At those intersections where the bus stops were eliminated, the traffic signals were put on permanent flashing operation in order to increase street capacity.

TRANSIT STUDIES

Speed and delay studies were made for the Municipal Railway on Sutter Street in order to support the railway's request for additional tow-away or 'no stopping' on the side of the street serving the minor flow of vehicular traffic. Special speed and delay studies were also made on Market Street looking toward the improved timing of traffic signals for the benefit of transit vehicles.



SLOAT BOULEVARD AND ZOO ENTRANCE
Showing Pedestrian Fence and Center Island Parking



TOWNSEND STREET AT S.P. RAILWAY DEPOT
Showing Pedestrian Fence for Control of Commuters

TRAFFIC SIGNS

During the year a new type of traffic sign was introduced. It is chartreuse in color and is used only for temporary installations where the public must be informed of a new type of operation. Examples of such use are to call attention to pedestrian push-buttons or to direct motorists to use two lanes for left turning.

New types of reflectorized materials were installed to test their ability to hold up under San Francisco's weather conditions. A number of beaded stop signs known as Scotchlite 'Flat Top' were placed along Sunset Boulevard facing the salt-laden fog and sea winds and a plastic material known as 'Reflexite' was installed on a few one-way street signs.

TRAFFIC STRIPING

The two-foot turning circles at intersections, used since pavement painting was first started in San Francisco, have been discontinued. The change was made in the interest of more efficient painting operations since their use was no longer considered necessary.

The method of keeping costs and records of traffic painting work has now been changed from a manual process to a mechanical accounting system. This reduces the cost of record keeping, provides more detailed cost information, and makes readily available more information as to the location and date of all work done.

TRAFFIC ROUTING

In the specifications for many of the construction jobs undertaken, special provisions were incorporated to require suitable handling of traffic. In general, such plans do not require a specific sequence of operations for the Contractor to follow but merely prescribe certain detours and specify the number of traffic lanes to be kept open on certain streets at particular times of the day.

Prior to the start of work in reconstruction of Monterey Boulevard, supplies of handbills showing proposed detours and explaining plans for handling traffic were given to interested improvement clubs, which mailed them to all their members. In the specifications for the reconstruction of Cross-Over Drive through Golden Gate Park from Fulton Street to Lincoln Way, special provisions required the temporary paving of the center island.

TRAFFIC FACILITIES AND IMPROVEMENTS

	Completed 1951-52	Approx. Cost 1951-52	Number In Place 6-30-52
SIGNALIZED INTERSECTIONS			
Wiley type signals removed	9		139
3-Light signals installed	14		299
Total newly signalized	5		438
Equipped with pedestrian signals	8		64
Interconnected signals dropped	2		231
Actuated signals added	17		47
Cost - all work		\$168,000	
TRAFFIC SIGNS			
Parking signs installed	362		
Other signs installed	1015		
Other signs replaced	164		
Total	1541	17,500	
(In addition, Calif. State Auto Assn. spent \$17,000 for labor)			
Stop-sign intersections added	256		
STREET NAME SIGNS			
Old type replaced by new	1183		
New installations	409	23,600	6542
Signs repaired	560	14,225	
Total Cost		37,825	
PARKING METERS			
New installations	997	49,850	10,801
Maintenance changes	480	3,600	
Relocations	472	3,550	
Total Cost		57,000	
TRAFFIC PAVEMENT PAINTING			
Standard Striping, Miles	1400	38,114	
12-inch stripes, Miles	94	77,407	
Pavement signs	7051	3,418	
Bus Zones	1028	12,302	
Parking meter stalls	6617	6,804	
Total Cost		138,045	
New School intersections	21		701
CHANNELIZED INTERSECTIONS			
Concrete islands	14	55,500	74
Raised Pavement bars	2	1,150	
Painted only	4	400	
Total	20	57,050	
TOTAL COST		\$475,420	

STREET AND SIDEWALK INSPECTION

A staff of six inspectors was employed during the year on control of street excavations, inspection of sidewalks and reports and investigations in connection therewith. On the average, two inspectors were engaged continuously on sidewalk inspections. They covered 17,025 frontages or about 7% of the total of about 250,000 lot frontages in the city. The districts inspected were as follows:

The Central 50 Vara District
 The southerly and westerly sections of the
 Western Addition
 Outer Richmond District
 Northerly Sunset District
 Haight-Ashbury section
 Easterly Mission District
 Noe Valley
 Central Excelsior District

In addition, new sidewalk contracts were inspected in the Anzavista, Potrero, Visitacion Valley, Ocean View and Merced Heights Districts and in the southerly Sunset and Parkside Districts.

Various street maintenance inspections and permit investigations were made by the remainder of the inspectors, the major types being utility excavations, tank installations, driveways, construction use of street space, pavement defects, house movings, blasting, and complaint and claims investigations. Activities are illustrated by the following summary.

Inspections, Notices and Investigations

Curb lowering inspections	817
Notices to construct or repair sidewalks	4684
Notices to remove obstructions, oil, etc.	506
Notices to replace side sewer covers	475
Street Space Inspections	2082
Sidewalk tank excavation inspections	174
House moving inspections	84
Defects in pavements reported	2858
Damage signs reported	274
Excavation repaving inspected	5854
Notices of Improvements posted	909
State Encroachment Permits obtained	89
Asphalt samples taken for analyses	21
Claims investigations and inspections	364
Special investigations	1504
Personal and telephone inquiries answered	11247
Citations requested	9

The permits approved and fees collected during the year are shown below.

Permit Applications and Fees

Utility Excavation Applications	Number	Amount
Pacific Gas and Electric	5,193	\$7,789.50
Pacific Telephone and Telegraph Company	328	492.00
San Francisco Water Department	4,583	6,874.50
Street Lighting, Trolley Signals, etc.	127	190.50
Total	10,231	\$15,346.50

Miscellaneous Permit Applications and Inspections

Driveways, Curbs, and Sidewalk Tanks	495	\$ 667.50
House Movings	85	1,640.00
Builders' Street Space Use	840	15,550.00
Building permits examined for sidewalk warp	244	
Total	1,664	\$17,857.50

Special Permit Applications

Blasting	11	\$
Flower Stands	41	1,440.00
Sidewalk	14	
Total	66	\$ 1,440.00

TOTALS	11,961	\$34,644.00
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DAMAGE CLAIMS

The Bureau investigated 174 damage claims based on street and sidewalk accidents which had been filed against the Department of Public Works during the fiscal year 1951-1952. Fifty-two were found to be the responsibility of contractors or privately or publicly owned utilities. The remainder included 56 claims alleging defective pavements and 66 alleging defective sidewalks. Under present law, the claims would be the responsibility of the Department of Public Works, if negligence in making repairs could be shown. In each of these cases a full report was made for the City Attorney, accompanied by photographs when appropriate.

The annual tabulation of all claims involving the Department of Public Works, closed in October 1951, is in preparation. This shows all claims or suits filed or active for the five-year period ending June 30, 1951 and is prepared for the information of the Director of Public Works and the City Attorney. It covers personal injury and property damage claims, of the type mentioned above, and also damage claims resulting from accidents in which Department of Public Works vehicles and equipment were involved, as well as accidents at street cave-ins caused by broken sewers.

A preliminary review of the claims and suits tabulated shows about 841 claims filed in the last five-year period and about 392 suits and claims still pending at the end of that period. This was a considerable increase over the number reported a year ago.

During the fiscal year 1950-1951, 92 suits and claims asking for damages aggregating \$891,754.00, were settled by the City in the amount of \$28,337.00.

SURVEYS AND MAPPING

During most of the year, one 2-man party and seven 4-man parties were employed on survey work. The two-man party was engaged in setting construction points in the Broadway Tunnel. Track removal surveys required the services of one party, and precise leveling another. The other five parties made various land and construction surveys. Survey lines run are segregated by type of survey as follows:

Type of Survey	Miles
Lots	1.7
Sewers	9.5
Cross Sections	104.1
Subsidence levels	3.5
Monument lines, including 35 monuments	1.7
Topography	7.7
New streets	4.1
Line and Grade for Curbs and Paving	38.3
Track Removal	10.2
Total length of surveys run	180.8

NUMBER OF SURVEYS

A total of 255 separate surveys were undertaken for the Department of Public Works and other City departments, classified as follows:

Public Improvement Surveys

Public and private contracts	100	
City Pay contracts	142	242

Lot Surveys

For Recreation and Park Department	4	
For Fire Department	2	
For School Department	2	
For Real Estate Department	2	
For Traffic Court	1	
For Parking Authority	2	13

Total number of surveys		255
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Survey fees were received during the year to the total amount of \$10,100.

PRECISE LEVELS

The levels run and bench marks set this year by the precise level party consisted principally of the retracing of level circuits to reset benches on streets where track removal, street widenings, and major street improvements had disturbed the former benches. A total of 28.7 miles were run and 1645 benches set.

OFFICE WORK

Eleven maps of school sites, fire-house lots, playgrounds and parking lots were prepared showing precise boundaries, locations of improvements and utilities and contours at five-foot intervals.

Computations, preliminary drawings and deed descriptions required for the acquisition of property were made on widening projects such as Thirteenth Street, San Jose Ave., Guerrero Street, Clarendon Ave., Woodside Avenue, Laguna Honda Boulevard, Phelan Avenue, the Mission Freeway and the Winston Drive Extension.

All tentative subdivision maps submitted were examined and checked for correctness of street widths and grades. Final subdivision maps submitted for filing in the Public Records were checked for correctness of all dimensions of lot lines and exterior boundaries.

Bureau of Engineering

POST-WAR STATE AID

Under the two State Aid acts providing financial assistance to local communities for the planning and building of public works in the post-war period, the City received \$1,489,442.58 during the fiscal year, bringing total receipts to \$8,462,190.12. Of the total, \$40,777.15 went to the Recreation and Park Department and the balance of \$8,421,412.97 to the Department of Public Works.

The following tabulation shows for each act the allocation for various purposes to the Department of Public Works, the payments received to date and the balances due.

SUMMARY OF STATE ASSISTANCE

Act and Purpose	Allocation	Receipts	Balance
Planning Assistance Act			
For Plans	\$ 547,502.90	\$545,852.90	\$ 1,650.00
For Land	249,621.72	124,474.35	125,147.37
Total Planning	\$ 797,124.62	\$670,327.25	\$ 126,797.37
Construction and Empl. Act			
For Highways	\$ 398,383.79	\$398,383.79	\$
For Other Project	7,959,078.97	7,352,701.93	606,377.04
Total Constr.	\$8,357,462.76	7,751,085.72	\$ 606,377.04
Total - both acts	\$9,154,587.38	8,421,412.97	\$ 733,174.41

Payments received from the State during the past year were as follows:

Payments Received 1951-1952

Date	Project	Amount
July 13, 1951	Sludge Treatment Plant (Const.)	\$ 732,308.72
Nov. 19, 1951	North Point Plant (Const.)	608,375.44
Jan. 21, 1952	13th St. Widening (Land)	35,000.00
Feb. 19, 1952	Army St. & San Jose Ave. (Plans)	2,750.00
Feb. 25, 1952	Southeast Treatment Plant (Plans)	52,593.99
May 22, 1952	Broadway Tunnel (Plans)	58,414.43
	Total	\$1,489,442.58

LABORATORY AND TESTING WORK

The laboratory was operated as a part of the Division of Construction to control the quality of materials used on construction projects and to control asphalt and concrete mixes used in pavements and structures. In addition, many routine tests were made for the Purchaser of Supplies and various City departments, including many visual analyses and suggestions.

CONCRETE

All concrete test cylinders continued to test above specified strengths. Concrete poured in various structures, including the Broadway Tunnel project, showed very few rock pockets or voids, due to using slightly higher slump and maintaining closer control of the use of vibrators.

Most of the concrete in the Broadway Tunnel was pumped into the forms with very satisfactory results. The concrete used in the arch of the tunnel was tested at 24 hours and 48 hours to determine safe stripping time. The 24-hour tests showed strengths of 500 to 1000 p.s.i. and the 48-hour tests ran from 1100 to 1800 p.s.i. Strengths varied according to the slump and the brand of cement used. All of the 28-day tests were well above 3000 p.s.i.

ASPHALT

The available paving sands continue to be a problem and the commercial asphalt plants find it difficult to control mixes due to the variation in the grading of the sands used. A new type of manufactured sand, made by crushing oversize Top Sand in a rod mill, was recently placed on the market for use in asphalt mixes. This sand works well but carries an excess of dust and is difficult to handle in unloading unless special facilities are available. Several asphalt mixes were used with local crushed rock in lieu of gravel. These mixes require less asphalt and produce a more stable base. In the past year a special inspector was trained to follow the laying of asphalt surfaces which resulted in jobs with more uniform surfaces, better joints and easier riding conforms.

SUMMARY OF TESTS PERFORMED

A summary of the number and kinds of tests made in the laboratory during the year, together with corresponding figures for the preceding year, are shown in the following table.

Bureau of Engineering

Laboratory Tests

Chemical and Physical Tests	1950-51		1951-52	
Public Utilities Commission	28		28	
Department of Public Works	314		208	
Purchaser of Supplies	80		105	
San Francisco Fire Department	48		60	
Recreation and Park Department	18		16	
Bureau of Architecture	24		250	
Bureau of Engineering	65	577	45	712
Paint Tests				
Recreation and Park Department	4		6	
Purchaser of Supplies	37		45	
Bureau of Architecture	30		35	
Public Utilities Commission	12		8	
Bureau of Engineering	12	95	10	104
Asphalt and Coal Tar Tests				
Corporation Trenches	20		30	
Public Utilities Commission	10		19	
Recreation and Park Department	12		8	
Department of Public Works	90		160	
Bureau of Engineering	60	192	200	417
Concrete Tests				
Bureau of Building Inspection	6		4	
Recreation and Park Department	166		32	
Bureau of Architecture	524		484	
Public Utilities Commission	636		105	
Bureau of Engineering	676	2008	1048	1673
TOTALS		2872		2906

SERVICES PERFORMED
FOR OTHER BUREAUS AND DEPARTMENTS

The Bureau of Engineering supplied technical services requested by several bureaus of the Department of Public Works and by other departments of the City as summarized below.

FOR BUREAU OF ARCHITECTURE

Preliminary estimates for installation of new oil and gas burners in boiler room, Civic Auditorium
Plans for S.F. Hospital Nursery ventilation

Inspection of boiler installations at S.F. Hospital
Preliminary estimate for remodeling City Hall basement
Plans for boiler heater installations at Portola Junior High School
Plans for coffee urn installation at Laguna Honda Home
Estimate for remodeling piping at Steinhart Aquarium
Plans for fire escape and for remodeling plumbing and ventilation at John Swett School
Plans and estimates for remodeling lighting at Laguna Honda Home

FOR BUREAU OF BUILDING INSPECTION

Review of plans for ventilation of Post Office Garage
Office lighting system improvement

FOR BUREAU OF SEWER REPAIR

Engineering services for sewage pumping stations

FOR BUREAU OF STREET REPAIR

Plans for alteration of Asphalt Plant yard in connection with 13th Street Freeway
Plans for traffic signal preempt equipment and modification of traffic control and warning units at Third Street Bridge

FOR RECREATION AND PARK DEPARTMENT

Topographic and boundary surveys of Eureka Valley, Upper Noe, and Corona Heights Playgrounds
Preparation of estimate for Phelan Beach Contract No. 2
Advice on operation of sewage treatment plant in Golden Gate Park

FOR BOARD OF EDUCATION

Topographic and boundary surveys for two school sites
Rearrangement of sewers for new schools
Relocation of lighting standards and installation of electric service at City College
Rerouting of power service line over school property at Lake Merced School
Remodeling of Paint Technology Laboratory at City College

FOR DEPARTMENT OF PUBLIC HEALTH

Installation of flagpole at Laguna Honda Home
Advice on operation of sewage treatment plant at Hassler
Health Farm in San Mateo County

FOR FIRE DEPARTMENT

Topographic and boundary surveys for one fire house lot
Auxiliary water supply system extensions on Filbert Street
and in Apparel City
Electrolysis survey and report

FOR POLICE DEPARTMENT

Installation of floodlights at Traffic Officer stations in
Golden Gate Park and at Folsom and Essex Streets
Speed studies on Lincoln Way

FOR SHERIFF'S DEPARTMENT

Inspections and tests at regular intervals for control of
operation of sewage treatment plant at County Jail No. 2
in San Mateo County

FOR MUNICIPAL RAILWAY

Design of street and cable car preempt traffic signals
Recommendations on bus zones, bus routes and terminals

FOR JUVENILE COURT DEPARTMENT

Repair and resurfacing of access road to Log Cabin Ranch

FOR TRAFFIC COURT

Topographic and boundary survey for Otis Street property

FOR SEALER OF WEIGHTS AND MEASURES

Plans for paving Farmers' Market
Construction of temporary timber sales sheds
Advice on traffic control

FOR REAL ESTATE DEPARTMENT

Topographic and boundary surveys for two lots

FOR DIRECTOR OF CIVIL DEFENSE

Preparation of maps and overlays for use in planning defense measures

Installation of 3 electric sirens and supervision of remote control and operation of all sirens

FOR PARKING AUTHORITY

Survey and plans for Bartlett Street parking lot
Reports on parking needs in downtown district and in North Beach area

FOR HOUSING AUTHORITY

Sewer Plans for Alemany Project

FOR REDEVELOPMENT AGENCY

Estimates for traffic signal requirements in Western Addition project

FOR CITY ATTORNEY'S OFFICE

Technical advice in connection with damage suits

FOR STATE DIVISION OF HIGHWAYS

Plans for modifying sewers to conform with Bayshore Freeway
Relocation and Installation of lighting and traffic signals along Bayshore Freeway

FOR S.F. ELECTROLYSIS AND CORROSION COMMITTEE

Cooperative electrolysis studies of underground utilities

FOR DEPARTMENT OF ELECTRICITY

Plans for installation of duct lines for fire alarm and telephone facilities along Woodside Avenue, Laguna Honda Boulevard, Clay Street and Turk Street

LABORATORY TESTS AND EXAMINATIONS

Made for Bureaus and Departments as follows:

Bureau of Architecture	769
Other Bureaus of the Department	372
Recreation and Park Department	62
Public Utilities Commission	160
Purchaser of Supplies	150
Fire Department	60

Total	1573
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GARBAGE DISPOSAL

Since 1932, all garbage and refuse collected in San Francisco, except limited amounts of hotel and restaurant wastes sold to hog raisers, have been disposed of by the sanitary fill method. Two licensed scavenger companies make the collections and haul to the dump and a jointly financed company operates the sanitary fill. The City's only functions are to control collection rates and enforce public health regulations.

COLLECTION AND TRANSPORTATION

All garbage and refuse is picked up at back doors in the residential districts once a week by the private scavenger companies. In the downtown districts, where large amounts of paper and garbage accumulate, general collections are made three times a week. At the larger hotels collections are made daily. No segregation is required on the part of the householder, but some salvaging is done by the collectors enroute and at a sorting shed near the disposal site. Paper, bottles, rags, metals, etc., are removed before weighing the amount of garbage hauled to the dump.

The amount of paper salvaged in 1951 was around 75 tons daily, this being only about 60% of the amount salvaged in the preceding year. Paper is hauled in about 24 flatbed trucks, some of which go directly to fiberboard factories and other users of waste paper. Surpluses not readily saleable are hauled to the dump and either burned or placed in the fill.

The two scavenging companies now use 130 trucks and average about 250 trips per day. Each truck has a capacity of about 20 cubic yards but after the removal of salvaged materials the load carried to the fill averages about 18 cubic yards. Total daily collections averaged 844 tons in 1951. The scavenger companies operate six days a week or about 312 days a year. Saturday collections are slightly above 60% of normal week day collections.

SANITARY FILL

The disposal site is located on a tide flat on the shore of San Francisco Bay just south of the City's southerly boundary. The property is owned by the Southern Pacific Company and adjoins the company's Bayshore switching yards for a distance of about 6400 feet. Quarries for cover material are located conveniently near the north and south ends of the fill site.

The present fill is 5600 feet long, measured along the original shore line and varies in width from 1000 to 1300 feet. The

surface of the fill had an area of 141.7 acres as measured in April 1952 and is fairly smooth and free from depressions. The elevation varies from 20 feet to 26 feet above mean sea level. Three test borings made by the State Division of Highways through the fill show that the depth of garbage varies from 33 to 42 feet and is underlain by a deep plastic clay formation. The limited information furnished by these test holes indicates that the fill has settled as much as 6 feet into the underlying mud.

A few bench marks in the fill area have been preserved and elevations were re-run on them in April 1952. The results indicate that, after the first three or four years, the surface of the fill settles at a fairly uniform rate of about 3 inches to 5 inches per year.

About 36 acres of the oldest part of the fill is now covered by commercial and light industrial buildings and yards. The most recent construction is a terminal built by the Sunset Scavenger Company, the larger of the two collection companies. The plant includes shops, offices, assembly rooms, and sheds to house 112 trucks and a two-story bottle washing building built on a pile foundation.

FILL AND COVER OPERATIONS

The Sanitary Fill Company, which is controlled by the two scavenger companies, handles the fill and cover operation at the fill site through Easley and Brassy, Contractors. The trucks dump the garbage at the margin of the fill and a large bulldozer compacts and levels it. Earth and rock is brought in at the end of the day from the quarry and spread over the garbage in 1½ ft. to 2 ft. layers. Additional layers are placed and covered after several weeks or months of settlement.

Of the 300 acres leased by the Sanitary Fill Company from the Southern Pacific Company about 160 acres is still available for future fill. The pit and quarry rights now owned by the company are sufficient to furnish cover material for many years to come.

STATISTICS

The quantities and costs, which appear in the following tabulation on a calendar year basis, are based on information furnished by Easley and Brassy. They do not include administrative and overhead expenses of the Sanitary Fill Company, which employs the contractor. The Sanitary Fill Company is permitted by franchise to collect 90 cents per ton from the scavenger companies.

SANITARY FILL AND COVER REFUSE DISPOSAL STATISTICS

Calendar Years 1950 & 1951

	1950	1951	
Total Income	\$ 249,516.07	\$ 236,579.87	
Expenses			
Operations	\$ 190,802.91	\$ 194,573.21	
Roads & Maintenance	2,956.87	4,811.07	
Administration & Inspection	51,261.30	49,059.15	
Total Expense	\$ 245,021.08	\$ 248,443.43	
Garbage & Refuse Handled, Tons			
City of San Francisco	275,268.47	262,544.92	tons
Other Sources	1,971.61	643.20	'
Total	277,240.08	263,188.12	'
Quantity per day, tons (312 days)	889	844	'
Cost of disposal per ton	\$ 0.918	\$ 0.945	
Cover Material			
Quantity Used, cu. yds	201,040	192,210	cu. yds.
Cost, Total	\$ 97,906.80	\$ 101,096.80	
Cost, per cu. yd.	\$ 0.487	\$ 0.527	
Cover per ton of Garbage and Refuse, cu. yds.	0.726	0.731	cu. yds.
Truckloads of garbage & refuse	84,500	77,713	
Average weight per load, tons	3.28	3.39	tons
Estimated Average Weight of Garbage per cubic yard (based on 18 cu. yd. loads)	365	377	lbs

SEWAGE DISPOSAL

GENERAL

The North Point Plant and the sludge treatment facilities at the Southeast Plant, two new units of the sewage disposal system, were placed in operation in December 1951. The sewage treatment facilities at the Southeast Plant will start operating in the fall of 1952. These plants and the Richmond-Sunset Plant, which has been operating since 1939, will treat all of the sewage from all areas of the City. The map on page 19 shows the location of the three plants and the areas which they serve. Present and maximum design flows in million gallons daily (mgd) are shown below.

Plant Flows In MGD

Plant	Dry Weather		Wet Weather Design
	Design	Present	
Richmond-Sunset	15	13.5	45
North Point	65	45	150
Southeast	26	15.7	70

The present flows shown for the new plants will not be fully realized until necessary pumping plants and collecting sewers have been constructed.

TREATMENT METHODS

Each plant provides primary treatment for removal of oil, grease, floating material, grit and settleable solids. The effluent is chlorinated for bacterial disinfection before being discharged into the ocean or bay. Sand and screenings from the North Point Plant and sand from the Southeast Plant are hauled by truck to the garbage fill south of the county line. At the Richmond-Sunset Plant, screenings are incinerated and sand is hauled to a city dump.

The Richmond-Sunset Plant provides two-stage digestion and elutriation and filtration of the digested sludge. During the past year all filter cake was hauled to city parks for use as a soil conditioner. In the future this cake will be hauled to the Southeast Plant for final drying. Raw sludge collected at North Point is pumped to the Southeast Plant through a 10 inch diameter concrete-lined force main approximately six miles long. The sludge treatment facilities at the Southeast Plant provide for thickening of raw sludge, two-stage digestion, elutriation, vacuum filtration, flash drying and pelletizing of dried sludge. Dried

sludge produced so far has been delivered to the Recreation and Park Department for use in City parks. A long term contract is to be let during the next fiscal year for sale of the material to a single buyer.

PERSONNEL

During the fiscal year the personnel of the Division of Sewage and Waste Treatment was increased from 30 to 95 to provide for operation of the new plants. The following table shows the distribution of plant employees as of June 30, 1952, exclusive of the Senior Engineer in charge of the Division.

Classification	North Point	Richmond- Sunset	South- east
Superintendent	1	1	1
Chemist	1	1	1
Water Chemist	2	1	3
Clerk-Stenographer	1	1	1
Chief Operating Engineer	1	1	1
Operating Engineer	6	6	7
Junior Operating Engineer	15	5	21
Janitor	1	-	1
Laborer	4	3	5
Truck Driver	1	1	-
	33	20	41

Six additional Junior Operating Engineers will be employed at the Southeast Plant when the sewage treatment facilities are placed in operation. Bacteriological work for the Division and for the individual plants, requiring one Water Chemist, is centralized at the North Point laboratory.

Engineering design for improvements is performed by other divisions of the Bureau as required. Major repairs and maintenance requiring the services of specialized crafts are done by other city forces. The Recreation and Park Department provides landscape maintenance at the North Point and Richmond-Sunset Plants.

SUPERVISORY PERSONNEL FOR TREATMENT PLANTS - June 30, 1952

North Point Plant

K. Fraschina, Superintendent

A.E. Bagot, Chemist

W.J. Angenent, Chief Operating Engineer

Richmond-Sunset Plant

B. Martin, Superintendent

G.J. Mallick, Chemist

T.L. Skillington, Chief Operating Engineer

Southeast Plant

J.H. Crafts, Superintendent

W.C. Jow, Chemist

R.R. Sotter, Chief Operating Engineer

TRAINING OF PERSONNEL FOR THE NEW PLANTS

Operators for the new plants were employed well in advance of actual operation in order to acquaint them with treatment plant equipment and methods and to train them for their specific assignments, as most of them lacked experience in this particular field. The training schedule occupied three months for Superintendents and Chemists, six months for Chief Operating Engineers, two months for Operating Engineers, one month for Junior Operating Engineers and Water Chemists. In most cases the planned training periods were somewhat exceeded due to unanticipated delays in completion of construction.

All new employees were first assigned to the Richmond-Sunset Plant where experienced supervisory personnel reviewed their qualifications and gave them a preliminary course of training. They were then assigned to the new plants where further training on their particular job assignments was given under direction of the Superintendents, Chemists and Chief Operating Engineers.

PRELIMINARY TESTING OF NEW PLANTS

A preliminary testing program was carried out at the North Point and Southeast Plants by the operating personnel, using water, air, gas, etc., prior to the introduction of sewage or sludge. This simplified the contractor's work in correcting any defects discovered. The final acceptance tests for all equipment were planned by Construction Division engineers in cooperation with the contractors and the design and operating divisions. Water was used where ever suitable to check tanks, pumps, pipe lines and operating and metering equipment. Other parts of the plant, such as control systems, plant communications and ventilation systems, were given operating tests.

The sludge force main between the two plants was initially checked for leaks by pumping water through the line, after which a chain-covered rubber ball was sent through to insure freedom from obstructions.

The testing program for the filtration, elutriation and drying units at the Southeast Plant was delayed until sufficient digested sludge became available, as described under Southeast Plant Operation.

MAINTENANCE OF EQUIPMENT

The maintenance program for equipment at the Richmond-Sunset Plant was continued as described in the 1949-50 Annual Report on page 69. Maintenance demands are increasing due to the age of the equipment. At the new plants equipment is being inspected and maintained in accordance with planned schedules generally conforming with the type of schedule adopted for the Richmond-Sunset Plant.

SAFETY PROGRAM

A safety program has been initiated at each plant as directed by general instructions from the Bureau Safety Engineer. Each plant has a safety committee of three men with the Chief Operating Engineer as Chairman, who is also the Plant Safety Engineer. The other members are from the chemical and operating sections. This committee makes regular inspections, recommends improvements in plant safety and reports on all accidents.

OPERATING REPORTS

The Plant flow diagrams, tables showing the costs of operation, and tabulations of operating data are given in full in Appendix IV. Significant general information for each plant is given in following paragraphs.

NORTH POINT PLANT OPERATION

Starting of the Plant

Sewage was first run through the plant in limited amount on December 6, 1951 following completion of the preliminary tests. One unit at a time was placed in service until all units had been tested and found to be operating satisfactorily. By the end of December all treatment units, except the chlorination and odor control systems, were in full 24-hour operation. Some equipment remained on hand operation pending completion of automatic electric controls. Raw sludge, initially discharged into the bay, was first pumped to the Southeast Plant on December 26th. Pre-chlorination for odor control was started in January and the exhaust air deodorizing system early in February. Post chlorination was deferred until the effect of offshore disposal of unchlorinated effluent on the coliform density of the receiving water could be evaluated but the facilities were operated for short periods to determine the effectiveness of the distribution

of chlorinating solution in the effluent channel and the dispersion obtained in the post chlorination structure.

Operating Results

The plant was continued in full 24-hour operation to the end of the fiscal year. During this time 8,159 million gallons of sewage were treated at an average dry weather flow of 41 mgd and peak flows up to 90 mgd during storms. For the period in which tests were made, the suspended solids were reduced from 270 parts per million in the raw sewage to 87 parts per million in the effluent. During the first six months of operation 1270 cubic yards of grit and 695 cubic yards of screenings were removed.

Operation of the plant has been generally successful but, as is usual with large new installations, some changes have become necessary due to the character of the material handled and other unforeseen conditions. The plant operating staff has made a number of modifications and others will be made during the coming fiscal year or when funds become available.

Odor nuisance in the plant has largely been confined to the screenings and sand handling facilities. Conditions have been greatly improved by increasing pre-chlorination dosage to 40 pounds per million gallons, by deodorizing equipment and screenings with a 1% solution of chloroben in water, by frequent floor washing, and by increasing the quantity of deodorant in the exhaust air systems.

Laboratory

The laboratory was not ready for use until February 18, 1952. Prior to that date samples were analyzed by North Point personnel at the Richmond-Sunset Plant laboratory. Approximately 1400 routine analyses were made between December 6, 1951 and the end of the fiscal year. In addition to its regular work, the laboratory staff made the following investigations:

1. Variation in solids content of raw sludge withdrawal and pumping cycles.
2. Variations in raw sewage and effluent characteristics throughout the day.
3. Comparison of automatic versus hand collected composites of raw sewage and effluent.
4. Distribution of chlorinating solution in post chlorination channels.

5. Diurnal variation in hydrogen sulfide throughout the plant.
6. Continuation of the bacteriological survey of the bay and ocean waters surrounding San Francisco. Samples were taken bi-weekly at 10 stations and weekly at 13 stations. The purpose of this program is to measure levels of pollution under varying tidal and seasonal conditions for use in evaluating plant effectiveness. Particular attention has been given to effects of offshore discharge of unchlorinated effluent from the North Point Plant. These studies indicate the mean coliform density in the receiving waters adjacent to this outfall have been reduced by approximately 50% since the plant has been in operation.

RICHMOND-SUNSET PLANT OPERATION

General

The operation of the sewage treatment facilities of the Richmond-Sunset Plant was normal during dry weather but, during the unusually heavy rainy season extending from December to April, considerable difficulty was experienced in handling the excessive quantities of rock, sand and clay carried to the plant, particularly from the Sunset district. On 45 days during this period, it was necessary to by-pass the Sunset pumping station and quite frequently to by-pass the gravity flow, partly because of the excessive sand and rock load and also to avoid the pumping of large quantities of sand and clay with the sludge to the digester. In addition the Sunset pumping station was by-passed 21 days during March as a result of failure in the operating mechanism of the diversion gate in Mile Rock sewer. As soon as possible, facilities will be provided for better control of flows to the plant and for by-passing if material deposited in the sewers so as to minimize the problems recently encountered. The percent of suspended solids and B.O.D. removed was lower than usual during the rainy season due to dilution of the sanitary sewage by runoff.

The vacuum filtration facilities were operated at full capacity until November. During that month the sludge concentration in the digesters was increased to build up a reserve so that one million gallons of liquid digested sludge could be transferred to the Southeast Plant for seeding purposes. Thereafter operation of the filters was intermittent conforming with the schedule of the plant truck and driver used in hauling dried sludge produced at the Southeast Plant.

An inspection was made of the scum layer in the new primary digester after three years of operation. No heavy scum layer was observed although there was a light scum immediately adjacent to

the four outer turbo-mixers and the large mixer in the center.

Laboratory

During the year studies were undertaken to determine the effect of adding chlorine ahead of the sedimentation tanks instead of to the plant effluent. To date, the indications are that chlorinating ahead of sedimentation produces practically the same bacteriological kill, with perhaps more efficient sedimentation and less odor than adding the same quantity of chlorine to the plant effluent. These studies will be continued with a revised chlorine diffuser in the channel leading to the sedimentation tanks.

A comparative study made on the use of filter cake and liquid digested sludge for seeding purposes at the Southeast Plant indicated that filter cake did not possess the same seeding qualities as liquid digested sludge.

An investigation of the removal of grease by various plant units was started late in the year and will be reported upon at a later date.

The program of testing domestic garbage grinder units submitted by manufacturers for conformance with requirements of the applicable City ordinance was continued.

The advisory service on the operation of the Activated Sludge Plants in Golden Gate Park and at the County Jail and the Sewage Treatment Plant at the Hassler Health Home was maintained.

SOUTHEAST PLANT OPERATION

Starting Digesters

The initial operation of the sludge filtering and drying facilities necessarily awaited the development of a sufficient quantity of digested sludge to permit continued operation at rated capacity for specified test periods. The digesters were started by:

1. Filling one group of three primary and two secondary digesters with water and heating and maintaining the primary digesters at 95° F.
2. Seeding one of the primary digesters with one million gallons of digested sludge transported by tank truck from the Richmond-Sunset Plant over a 30 day period.

3. Transferring supernatant from this primary through the second and third primaries in series and then to the secondary digesters.
4. Transferring some bottom sludge directly from the first primary to the other primaries.
5. Adding raw sludge in an amount equal to 10% of the solids loading when 500,000 gallons of seeding material had accumulated in the primary digester and maintaining this ratio as the amount of solids in the digester increased.
6. Adding raw sludge to the second and third primaries as the solids loadings permitted.

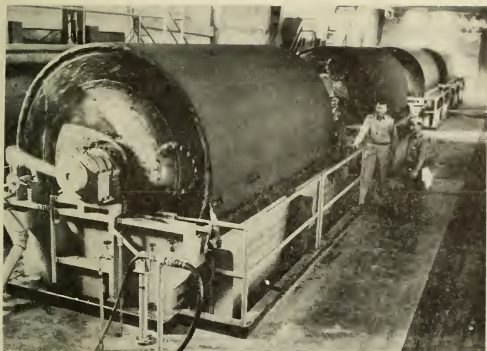
The raw sludge seeding operation started on December 10, 1952. After 33 days the three primaries were handling the total raw sludge output of the North Point Plant, approximately 60,000 pounds per day.

Gas production from the seeded digester was first observed eight days after the start of the seeding sludge transfer. Production reached 3300 cu. ft. in 24 hours ten days after seeding operations began and 125,000 cu. ft. in 24 hours six days after feeding with raw sludge started. Thereafter the amount of gas production reflected the load of raw sludge added to the digesters. Digester gas was used for heating the digesters and dryers after February 15, 1952.

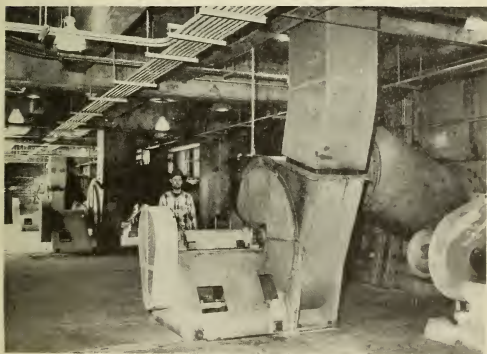
Supernatant and bottom sludge from the primary digesters were transferred to the secondary digesters starting in March 1952. By the middle of April sufficient digested sludge had accumulated to permit operation of one dryer at rated capacity for thirty days. During the interim digester conditions were checked for volatile acid, alkalinity, volatile matter, pH, and composition of gas.

Starting Filters and Dryers

During March all auxiliary equipment for the vacuum filters was checked by plant personnel in cooperation with the manufacturer's representatives. The filter drums were then soaked by revolving them continuously in a bath of water for 168 hours, after which the filter cloths were installed. Production of filter cake, using elutriated sludge with City water as an elutriant, was started on April 7, and continued intermittently as needed to check and adjust secondary elutriation, filtration and conveying equipment under operating conditions, to insure a steady



SOUTHEAST PLANT
Vacuum Filters



Dryer Cage Mill

and adequate supply of filter cake for drying and to determine the nature of the filter cake produced.

The dryer equipment was checked and the operators schooled prior to actual operation. Dryer operation was started on April 14. Each dryer was operated 8 hours daily for three weeks and then for one week continuously. During this period operating personnel conferred freely with the representatives of the manufacturer. Preliminary operation had the following objectives:

1. Checking and adjustment of all components of the system.
2. Development of proper operating procedures, especially in connection with starting and stopping of the dryers, and co-ordination between the operation of the filters and dryers.
3. Unofficial check of each dryer prior to official acceptance runs.

The dryers were shut down on May 26 for two weeks to permit construction engineers to make final inspections and the manufacturer to make adjustments and changes before the start of the official performance tests.

The 16-hour performance tests on each dryer required by the construction contract were started on June 10 at 8:00 A.M. and completed by midnight June 12. All specification requirements were met.

Operations and Changes

By the end of the fiscal year 10,199 pounds of raw solids were added to the seeded digesters and 112.5 tons of filter cake and 603 tons of dried sludge were hauled to City parks.

Some changes in operation, equipment and layout were required to improve operating efficiency. These included:

1. Addition of air to the withdrawal hoppers of the raw sludge thickening tanks to prevent formation of septic sludge blankets.
2. Continual re-circulation of bottom sludge from the primaries to move sand deposits and to prevent plugging of the draw-off lines.
3. Changes and adjustments in the method of feeding ferric chloride for vacuum filtration.

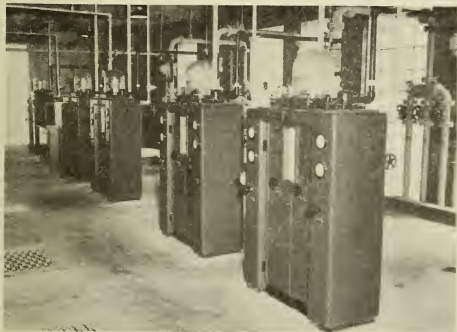
Laboratory

The laboratory was set up during September and October. By March 1952 routine control measures were established for the units then in operation. Laboratory operations were flexible and subject to change as plant operation developed and presented new problems. Special investigations conducted included:

1. Comparison of competitive ferric chloride solutions submitted to the City for purchase.
2. Sampling and analyses as requested by Bureau of Sewer Repair.
3. Special analyses for the dryer acceptance tests.
4. Development of procedure for use in the investigation and analyses of industrial wastes.

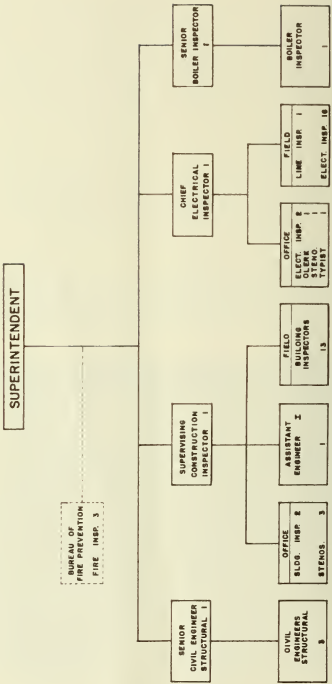
Sewage Treatment Facilities

The sewage treatment facilities were maintained from December 1951 to the end of the fiscal year. During this period all equipment was operated and serviced to prevent deterioration during the interval between completion of construction and initial operation.



NORTH POINT PLANT
Chlorinators

ORGANIZATION CHART
BUREAU OF BUILDING INSPECTION



FIRE INSPECTORS ASSIGNED TO THIS BUREAU BY THE FIRE DEPARTMENT TO CHECK ALL PLANS FOR COMPLIANCE WITH FIRE CODES AND TO REPORT TO SUPERINTENDENT ON ALL NONCONFORMITIES WITH BUILDING CODES.

APPROVED: *Ernest O. Bush*
ERNEST O. BUSH, SUPERINTENDENT
BUREAU OF BUILDING INSPECTION

FUNCTIONS

For the purpose of ensuring compliance with City ordinances, the Bureau of Building Inspection reviews plans and inspects construction and installations involving structural, electrical and mechanical work throughout the City. It also studies and reports on legislation affecting buildings and structures and proposes new legislation as required.

BUILDINGS

The Bureau consults with architects, engineers, contractors and home owners in the preliminary stages of the preparation of their plans, whether for new buildings or for alterations to existing buildings. It studies and reports on legislation affecting building matters and proposes new legislation as required.

The Bureau examines and reports on all applications for permits submitted to the Department of Public Works for new buildings, alterations to existing buildings, billboards and signs (electric and non-electric); inspects all this work as it progresses; makes a final inspection of new buildings or where a change of occupancy classification occurs, and issues Certificates of Final Completion when the work is finished.

Four 'called inspections' on buildings are made at the following times:

- a. Foundations or other concrete forms must be inspected and approved before concrete is poured.
- b. Inspection before interior lathing. This is to see that all bracing, framing and fire stops are installed.
- c. Inspection before exterior or structural plaster is in place.
- d. Final inspection prior to occupancy.

ELECTRICAL WORK

The Bureau regulates and supervises the installation of interior electric wiring of commercial, industrial and residential buildings and insures by frequent and adequate inspection that the standards provided for in City Ordinances, State and National Codes are maintained. Closely tied in with the inspection of interior wiring of buildings are other activities of the Bureau made necessary by the provisions of electrical ordinances affecting other City departments, and which entail cooperation with

the Fire Prevention Bureau, Police Department, Health Department, and with the Division of Industrial Safety of the State of California. Some of these activities are summarized in the following paragraphs.

Reports of fire presumably caused by defective electrical installations and all places reported to be of potential electrical hazard are also checked by the electrical inspectors.

Coin operated amusement devices with electrical controls are licensed by the Police Department and, before issuance of permit, are required to meet the approval of the electrical inspector.

Night clubs and places of public assembly are licensed through the Health Department and, before a permit to operate is granted, the requirements of this Bureau in regard to adequate lighting and emergency must be complied with.

A copy of all complaints and violations of the Electrical Safety Orders of the State of California issued to property owners is filed with this Bureau, is checked and verified by the electrical inspectors, and is held in the files until final approval is given.

State of California laws require that the electrical installation of wiring circuits, fixtures, signs, motors and electrical appliances be made by contractors licensed by the State, and San Francisco ordinances require that such licensed contractors be registered with the Bureau. Industrial plants which have their own plant electricians must also register with the Bureau.

All spray painting establishments in the City of San Francisco are licensed through the Fire Prevention Bureau, and before licenses are issued the electrical work connected therewith must be approved by this Bureau.

BOILERS AND AIR TANKS

Steam boilers and air pressure tanks are inspected to ensure compliance with all existing laws.

PERSONNEL

The personnel of this Bureau as of June 30, 1952, consisted of the following:

- 1 - F560 Superintendent
- 1 - F412a Senior Engineer, Civil
- 3 - F410a Engineers, Civil
- 1 - F404a Assistant Engineer I, Civil
- 1 - A110 Supervising Construction Inspector
- 15 - A106 Building Inspectors
- 1 - E8 Chief Electrical Inspector
- 18 - E4 Electrical Inspectors

1 - E2 Line Inspector
2 - M158 Boiler Inspectors
1 - B222 General Clerk
4 - B408 Clerk-Stenographers
1 - B512 General Clerk Typist

50 - Total

PERSONNEL LOSSES

During the past year this Bureau lost the valued services of three inspectors by retirement, namely, Mr. Cornelius Dempsey and Mr. Fred Patterson of the Building Inspection Division, and Mr. Bernard F. (Ben) Wiesinger of the Electrical Inspection Division.

Mr. Dempsey and Mr. Patterson entered the city service in 1925, and since that time both men had been affiliated with the Bureau of Architecture and the Bureau of Building Inspection.

Mr. Wiesinger entered the Electrical Inspection Bureau in 1924. He is a Past President of the Southwestern Section of the International Association of Electrical Inspectors, and a former member of the Executive Council of the International Association.

ORGANIZATION

The organization of the Bureau is shown on the accompanying chart. Duties of the various members of the staff are described in the following paragraphs.

Superintendent - In addition to supervising the office, he takes an active part in the deliberations of various departments of the City government as well as other organizations with reference to matters of building construction, the building code, and building safety.

Supervising Construction Inspector - Acts as assistant to the Superintendent in the field; assigns and supervises the work of building inspectors; prepares records and reports; and checks construction progress.

Building Inspectors - One building inspector assists the Supervising Construction Inspector. He assists the public at the counter and provides them with the information they seek concerning various building regulations.

One building inspector represents the Director, Department of Public Works, on all cases coming before the Board of Permit Appeals with the exception of new construction. He inspects and

reports on all night club and dance halls, and condemnations, when requested by the Police Department and Department of Public Health.

Twelve building inspectors are assigned to specific districts into which the city is divided and are charged with the responsibility for inspection work in their respective districts. This includes new construction of all types; alterations, billboards and signs. They report on all applications for construction in their districts prior to examination by the divisions of the Bureau, prepare and post Certificates of Final Completion, check and follow up complaints, interview property owners, and appear before courts in matters of condemnation and prosecution.

Boiler Inspectors - Make all installation inspections, where any pressure vessel is installed. Inspect all boilers and air pressure vessels regularly when they are not insured. Inspect and recommend repairs to defective equipment.

As deputy state inspectors, they must check all requests made by the Division of Industrial Safety and report any action taken by the city. Investigate all accidents where pressure vessels are involved and report the probable cause to the State and to the National Board of Boiler & Pressure Vessel Inspectors.

One inspector is a member of the A.S.M.E. Boiler Code Committee and passes on all new A.S.M.E. code changes and submits his report each month to the New York office of the A.S.M.E.

Complaints about pressure vessels are investigated and the necessary action taken to eliminate any defects or violations if found.

Senior Engineer (Civil) - Acts as Chief Structural Engineer and as principal assistant to the Superintendent; reviews engineering data submitted for approval of new materials and assemblies and makes recommendations to the Superintendent regarding such approvals; and supervises the work of the other engineers in the Bureau.

Structural Engineers (Civil) - Check and report on all plans pertaining to structural engineering, make field inspections, follow up matters concerning structural safety brought to their attention by the Supervising Construction Inspector or the district building inspectors, and assist other departments or bureaus in structural matters

One Engineer, Civil, examines all plans and details for new construction and estimates the cost thereof. He also represents

the Director, Department of Public Works on all cases coming before the Board of Permit Appeals which concern new construction.

Clerical Force - Performs general and varied stenographic work, maintains records and files.

Chief Electrical Inspector - Under general direction assigns, supervises and reviews the work of electrical inspectors, approves or disapproves plans and specifications for electrical installations, supervises the maintenance of inspection records, and makes required reports.

Two electrical inspectors are detailed to the enforcement of the Electrical Sales Ordinance. This ordinance governs the sale, display, or giving away as a premium, all electrical material, devices and appliances designed for attachment to, or installation in or on any electrical circuit or system for light, heat or power. This entails visiting all retail stores, premium stores, factory agents, jobbers, manufacturers, and wholesalers to inspect all materials, devices, and appliances, and to determine whether they are approved by this department before they can be sold, displayed, or installed in San Francisco. In many cases this means granting a provisional approval on articles that have been submitted to Underwriters' Laboratories, Inc., for testing, but testing not having been completed, allows a manufacturer to install or sell these appliances or materials with the proviso that any corrections required be made in the field. There are 1854 retail stores registered under this ordinance at present. These stores are visited regularly for the purpose of inspecting the merchandise, and as more merchants are going into business all the time and many ownerships are being changed, it is necessary to visit these stores to check their registration and inspect their merchandise.

The Line Inspector - inspects all installations, alterations, and maintenance of overhead lines owned and operated by public and private utilities used for the purpose of distributing electric power and light, communication and signal transmission, to see that they conform to the Rules for Overhead Line Construction (G.O. 95), Public Utilities Commission, State of California, and the San Francisco Electrical Code. The line inspector also checks plans and specifications, and inspects all overhead lines pertaining to trolley coach installations. He inspects temporary electrical street decorations when supported by trolley span wires, or messengers. He inspects installations of radio and television antennas. He checks all underground districts to see that they are kept clear of all overhead wires and cables. He checks the erection of scaffolds that may be in proximity to high voltage lines. During the fiscal year 1951-1952, 696 pole permits were issued.

Two electrical inspectors - are assigned to office work. They handle all complaints and requests for information from the public.

Fourteen electrical inspectors - are assigned to districts in the City and each handles all of the electrical work in his assigned district except those items under the Electrical Sales Ordinance.

BUILDING CODE

At the present time one member of the Bureau is working with the Superintendent in reviewing the present building code, which became effective in 1947, for the purpose of clarifying many portions of the code as well as eliminating conflicting requirements in the code itself and conflicts between other local and State building requirements.

It is proposed to make such amendments to the code as to bring it into conformity with the latest construction and code practices and eventually to have as nearly as possible a performance code.

BUILDING CONSTRUCTION

The volume of building construction for the following fiscal years was:

1948-1949	\$77,802,043
1949-1950	57,390,275
1950-1951	78,432,578
1951-1952	47,066,668

The Metropolitan Insurance Company's Park-Merced Housing Project has been completed and the shopping center in the Stoneson Housing Project is nearing completion. The shopping center south of Sloat Boulevard constructed by the Standard Building Co. is completed.

WORK DONE

The extent of routine operations of this Bureau for the fiscal year is set forth in the following tabulation taken from the records of the Central Permit Bureau.

Type of Construction	No. of Permits	Estimated Cost
1 A	1	\$ 4,400,722
1 B	11	6,948,162
2	-	-
3	22	2,749,161
4	22	549,619
5	980	15,772,730

Alterations	6,251	\$16,607,964
Billboards	196	38,310
Totals	7,488	\$47,066,668

Type 1A - Steel frame with reinforced concrete walls and floors.

Fire-resistive construction.

Type 1B - Built entirely of reinforced concrete. Fire-resistive construction.

Type 2 - Heavy timber construction with exterior walls of masonry.

Type 3 - Wood frame floors with exterior walls of masonry. Ordinary masonry construction.

Type 4 - Light incombustible frame construction.

Type 5 - Wood frame construction.

BUILDING AND BOILER PERMITS AND INSPECTIONS

The following compilation of statistics of monthly reports indicates the volume of work done during the fiscal year for other than Electrical Inspection, unless noted:

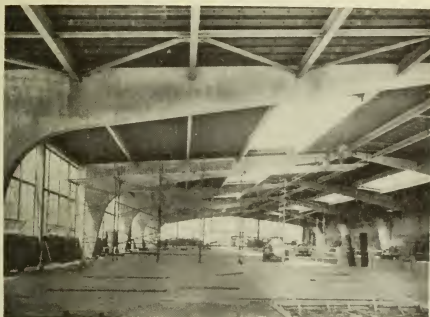
Inspections reported by inspectors of buildings	53,462
Projects remaining on which permits have been issued that have not been reported completed by inspectors of buildings	3,501
Complaints that have been reported adjusted by inspectors of buildings	2,712
Inspections reported by inspectors of boilers	2,786
Projects remaining on which permits have been issued that have not been reported completed by inspectors of boilers	2
Complaints and requests for information recorded	38
Applications for permits examined by and approved by structural engineers	4,387

Applications for permits pending	123
Applications for permits examined and approved by plan checker	1,359
Miles traveled during the year by 29 passenger cars on inspection service includes electrical inspectors	179,535

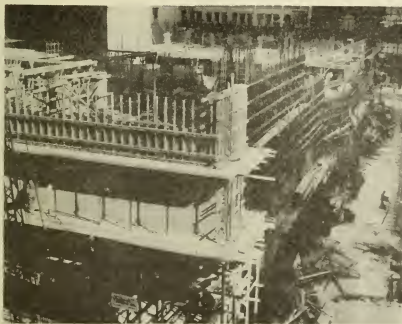
ELECTRICAL PERMITS AND INSPECTIONS

The following compilation of statistics indicates the volume of work done during the fiscal year by the Electrical Inspection Division:

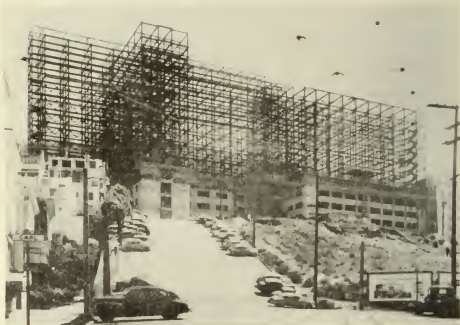
Permits issued, wiring, fixtures, signs	15,891
Inspections made	57,337
Complaints investigated (found defective)	7,644
Installations uncovered that were not recorded with the department ('sneaked in' jobs)	3,348
Installations in progress as at June 30, 1952	18,884
Installations completed	19,773
Pin ball machine inspections	7,724
Juke box inspections	4,728
Electrical Sales inspections	4,319
Overhead line inspections	4,807



GREYHOUND GARAGE
8th and Hooper Sts.
Erected by Barrett and Hilp
August 1952



BARRETT LICK GARAGE
Erected by Barrett and Hilp
Post, Sutter and Lick Place
August 1952



UNIVERSITY OF CALIFORNIA TEACHING HOSPITAL
Arguello and Parnassus Sts.
Clinton Construction Co.
August 1952



MERCY HIGH SCHOOL
Erected by Barrett and Hilp
19th Ave. near Winston Drive
August 1952



METROPOLITAN LIFE INS. CO. EXTENSION
S.E. Cor. California and Stockton Streets
Erected by Cahill Bros.
August 1952



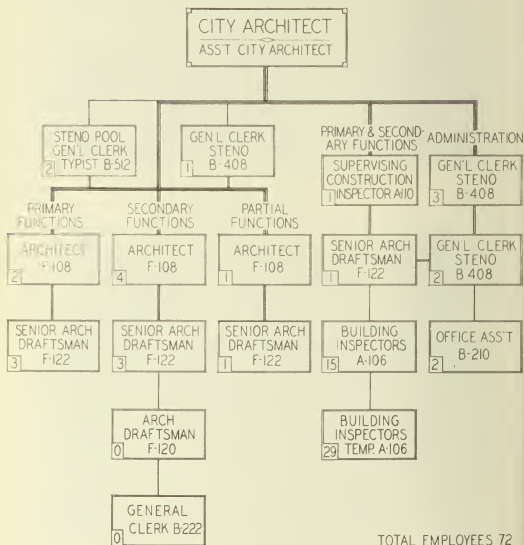
350 SANSOME BLDG.
S.E. Cor. Sacramento and Sansome Sts.
Erected by Cahill Bros.
August 1952

BUREAU OF ARCHITECTURE

DEPARTMENT OF PUBLIC WORKS
DODGE A RIEDY CITY ARCHITECT

ORGANIZATION CHART

JUNE 30, 1952



TOTAL EMPLOYEES 72

[3] NUMBER OF EMPLOYEES

FUNCTIONS

The activities of the Bureau of Architecture are divided into three distinct functions. Primarily, the Bureau is concerned with complete architectural services on requests of other Bureaus and Departments for alterations, general repairs, maintenance, remodelization, and new minor construction programs. Program building survey requirements with necessary survey research for requirements including estimates and total allotment for future civic building construction budget is an important function of this division. This function has increased this fiscal year due to the excessive alteration work requested by the Board of Education.

The secondary function is concerned with supervising, consulting, coordination, allotment programing, estimating, and checking the civic work program of Architects under contracts.. This function will be a steady flow until the completion of the 1948 School Bond Issue. However, the coming fiscal year will show a decrease in volume.

Partial function includes architectural services such as design, planning, architectural detailing, and specifications for the Bureau of Engineering and the Water Department. This function also includes preliminary studies, complete with program requirements, building cost estimates, and total budget allotment for future civic new building construction as well as complicated alterations for long term budget purposes on requests of other Bureaus and Departments.

GENERAL

The following is a resume' of the 1948 School Bond Issue at the end of this fiscal year:

Stage	Cost	Percent of Total
Construction Completed	\$ 6,204,936.58	17
Construction Under Contracts	14,915,052.00	40
Plans ready to be Advertised	1,521,000.00)	30
Working Drawing Stage	9,804,100.00)	
Preliminary Drawing Stage	4,638,518.00	13
	\$37,083,606.58	100

The Bureau of Architecture's activities on the School Bond Program new construction projects will be ebbing during the beginning of the next fiscal year and consequently activities will be increased on the maintenance, modernization, and alteration programs.

An achievement in cooperative planning, designing, and developing of construction contract documents between approximately 30 outside Architects, 18 Structural Engineers, and 13 Mechanical and Electrical Engineering firms was necessary in order to allow the various stages of the building program to proceed both in the field and office.

Similar to the School Program, but on a smaller scale, the projects for the Police, Library, Fire, Juvenile Probation, and Health Departments have proceeded as rapidly as these respective programs could permit.

The construction work completed was practically the same as that of the last fiscal year. Contracts under construction were increased 33% while the work under preparation is practically the same. However, approximately \$1,500,000.00 of the work under preparation is completed and ready for advertising for bids.

PERSONNEL

The regular staff of the Bureau remained about the same during the fiscal year. In the Inspection Division, 29 temporary Inspectors were hired for school modernization summer work, which as a rule, will be terminated within three months.

	June 30, 1951	June 30, 1952
City Architect	1	1
Assistant City Architect	1	1
Architects	7	7
Sr. Architectural Draftsmen	7	7
Architectural Draftsmen	1	0
Office Assistant	1	2
General Clerk	1	0
General Clerk Stenographers	6	5
General Clerk Typists	3	4
Supervising Constr. Inspector	1	1
Building Inspectors	18 Plus 14 Temp.	15 Plus 29 Temp.
TOTALS	47	43

The Bureau of Architecture's personnel is divided into four groups according to location. The duties performed by these groups are briefly outlined as follows:



JOHN A. O'CONNELL VOCATIONAL & TECHNICAL INSTITUTE
Before Alteration



JOHN A. O'CONNELL VOCATIONAL & TECHNICAL INSTITUTE
After Alteration

Photo courtesy - Alex M. Myers.

Bureau of Architecture

Persons	Location	Activities
7	Room 265, City Hall	Administrative, Conferences, Assembly of Plans & Specs. for bidding, General Files, Drafting for Budget.
9	Room 252, City Hall	Inspection, Estimates, Preliminary Dept. Program and Budget Section, Analyses of Construction Costs.
12	45 Hyde Street	General Drafting Room Specifications, Drawings, General Working Drawing Dept. Checking, Research & Report Section.
44	In the Field	Field Inspection

WORK DONE

The majority of the work performed by the Bureau of Architecture during the fiscal year 1951 - 1952 was divided between the primary and secondary functions of the Bureau. During this year, the value of the work performed was as follows:

Work Under Preparation	\$ 17,864,616.00
Work Completed	5,699,983.78
Contracts under Construction	16,526,704.15
TOTAL	\$ 40,091,303.93

The segregation of this work by Departments for which the work was done is shown in the following table. Details of the class of work and the type of project will be found in Appendix II.

SUMMARY OF CONSTRUCTION PROGRAM

SHOWING ALL WORK COMPLETED, UNDER CONSTRUCTION, AND UNDER PREPARATION
JULY 1, 1951 TO JUNE 30, 1952:

WORK COMPLETED

Board of Education	
New School Bldg. Constr.	\$ 3,612,079.70
Test Borings & Soil Analyses	26,008.45
Miscellaneous Alterations	862,589.50

\$4,500,677.65

Public Health		
San Francisco Hospital	\$ 73,044.20	
Laguna Honda Home	7,536.96	
Health Center Building	25.00	
		\$ 80,606.16
Museums		
M.H. deYoung Memorial	\$ 5,009.40	
Legion of Honor	9,216.00	.
		14,225.40
Fire Department		
New Construction	\$ 205,757.57	
Alterations	17,165.24	
		222,922.81
Juvenile Court		
Youth Guidance Center		776,724.02
Public Library		
Alterations		1,555.00
Civic Center		
City Hall	\$ 2,681.00	
Civic Auditorium	74,071.00	
		76,752.00
Miscellaneous		26,520.74
	TOTAL WORK COMPLETED	\$5,699,983.78

CONTRACTS UNDER CONSTRUCTION

Board of Education		
New School Bldg. Constr.	\$14,915,052.00	
Test Borings & Soil Analyses	4,880.00	
Miscellaneous Alterations	1,188,960.07	
		\$16,108,892.07
Public Health		
San Francisco Hospital	115,967.60	
Laguna Honda Home	19,512.00	
		135,479.60

Bureau of Architecture

Museums

M.H. deYoung Memorial	\$ 55,946.17
Legion of Honor	4,594.00

\$ 60,540.17

Fire Department

New Construction	194,711.00
Alterations	18,222.75

212,933.75

Civic Center

Civic Auditorium	8,858.56
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TOTAL CONTRACTS UNDER CONSTRUCTION \$16,526,704.15

WORK UNDER PREPARATION

Board of Education

New School Bldg. Constr.	\$15,963,618.00
Miscellaneous Alterations	392,878.00

\$16,356,496.00

Public Health

San Francisco Hospital	135,170.00
Laguna Honda Home	53,250.00
New Construction	100,000.00

288,420.00

Museums

M.H. deYoung Memorial	4,800.00
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Aquarium

Steinhart Aquarium	8,000.00
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Fire Department

New Construction	661,000.00
Alterations	10,900.00

671,900.00

Public Library

New Construction	150,000.00
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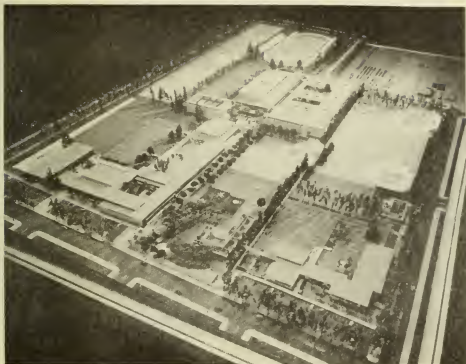
Miscellaneous

385,000.00

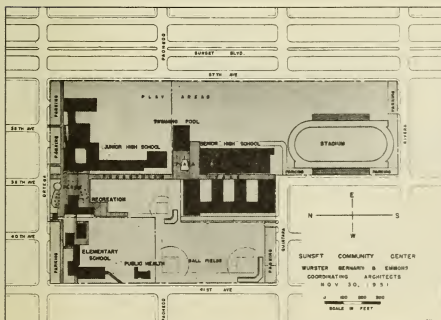
TOTAL WORK UNDER PREPARATION \$17,864,616.00

GRAND TOTAL

\$40,091,303.93



SUNSET COMMUNITY CENTER
Ortega Street - Looking South



MASTER PLOT PLAN



OLD YARD AT 11th & BRYANT STREETS ABOUT 1913



NEW YARD AT 2323 ARMY STREET

Maintenance Yard Activities were transferred from the old to New Yard on Oct. 1, 1951.

Lawrence J. Archer, Assistant Director of Public Works

Maintenance and Operation activities of the Department of Public Works are centered in the four bureaus of Sewer Repair, Street Cleaning, Street Repair, and Building Repair, except that operation of the City's three sewage treatment plants are under direction of the City Engineer.

NEW MAINTENANCE YARD FACILITIES

Yard facilities were moved from the old yard at 11th and Bryant Streets, with exception of the Municipal Asphalt Plant, to the new yard at 2323 Army Street.

Operations at the new yard started on October 1, 1951. Facilities provide for the bureaus of Sewer Repair, Street Repair, Building Repair, Street Cleaning and a section of the Bureau of Accounts.

The old yard was first acquired immediately after the 1906 earthquake and fire, as a temporary site. Operations at the old yard continued, however, until the proposed new 13th Street Free-way forced removal to the new site on Army Street.

Cost of land, improvements and equipment for the new yard amounted to a total of \$763,404.06 broken down as follows:

Land - About 4.3 acres having a frontage of 400 feet on Army Street with a lot depth of 424 feet, exclusive of an unimproved irregular area at the southeasterly corner of site	\$ 65,082.36
Improvements - Including buildings, utilities, incidental and engineering	623,133.34
New Equipment - Supplementing usable equipment from old yard	73,094.09
Miscellaneous Expenses - Including moving costs from old yard, and materials and supplies for new equipment	2,094.27
Total Cost to July 30, 1952	\$763,404.06

The City retained the services of Jessie Rosenwald, Consulting Engineer who prepared the contract plans and specifications. His fee, as well as architectural and engineering cost of work performed by City personnel, is included under the heading of Improvements in the foregoing paragraph.

Contracts were awarded on March 3, 1950 to Biltwell Construction Company for the general construction work, at a final cost of \$435,100.13, to Jack Rosen for plumbing and mechanical work at

a final cost of \$64,292.77 and to Enterprise Electric Company for electrical work at a final cost of \$45,359.80. The foregoing contracts amounted to a total of \$544,752.70. Additional work amounting to \$16,547.67 was performed by yard forces.

PHYSICAL CHARACTERISTICS OF SAN FRANCISCO

Physical characteristics of the City and County of San Francisco have a marked influence upon maintenance and operation activities of the department. The City occupies the Northern end of San Francisco peninsula. A low spur of the Coast Range extends northward through the City slightly west of the central axis and has a maximum elevation of over 900 feet at Mount Davidson, Twin Peaks, and Mount Sutro. This spur divides the City into two main drainage areas, one sloping generally westward toward the Pacific Ocean, and the other generally eastward toward San Francisco Bay. In the main, the topography of the City is hilly, but the northeastern and eastern areas, some portions of which have been reclaimed by filling to the present bulkhead line, are low and flat.

The area of the city is 129.18 square miles, including land and water. The land area on the San Francisco peninsula is 44.75 square miles or roughly a little less than 7 miles square with its boundaries practically corresponding with the cardinal points of the compass. Alcatraz, Yerba Buena and Treasure Islands have an additional land area of about one square mile. The length of the shore line bordering upon San Francisco Bay on the east, Golden Gate Strait on the north and the Pacific Ocean on the west, is approximately 23 miles.

Population of San Francisco, as recorded by Federal Census each decade, is as follows:

Year	Population	Year	Population
1860	56,802	1920	506,676
1870	149,473	1930	434,394
1880	233,959	1940	634,536
1890	298,997	1945	827,400
1900	342,782	1950	775,357
1910	416,912		

Over 80 percent of the mean annual rainfall of 22.02 inches occurs during November through March, with only slight rainfall during May through October.

The City has about 800 miles of paved and accepted streets and 790 miles of sewers; each such distance being about equal to the shortest highway route from San Francisco to Salt Lake City, Utah.

ORGANIZATIONAL CHANGES

The new charter, of 1932, changed the organizational set-up of the Board of Public Works, under management of 3 commissioners appointed by the Mayor, to the Department of Public Works, in charge of a Director of Public Works appointed by the Chief Administrative Officer. The Director of Public Works succeeded, generally, to the powers and duties of the Board of Public Works from and after 12 o'clock noon on January 8, 1932. A newly created position of Assistant Director of Public Works (Maintenance and Operation) was filled by appointment from a Civil Service list on September 27, 1950.

STREET REPAIR. In the early days of San Francisco, street construction and maintenance were the responsibility of a department of streets and highways under an elected commissioner. Later the name of the unit was changed to the department of streets, highways and squares. In 1900, the Board of Public Works was created and the street work was divided between two bureaus of the new department. The engineering and construction of streets was placed under the new Bureau of Engineering and the Maintenance was allocated to the new Bureau of Streets. On July 1, 1950 the Bureau of Streets was divided into two separate bureaus; the Bureau of Street Repair and the Bureau of Street Cleaning.

BUILDING REPAIR. Prior to 1900 the repair and maintenance of public buildings was handled by a number of City and County agencies. The Charter of 1900 established the Bureau of Building Repair under the Board of Public Works for the purpose of centralizing this repair and maintenance work.

SEWER REPAIR. Prior to January 8, 1900, sewer construction and repair was under the direction of the Superintendent of Public Streets, Highways and Squares. A new Charter effective on that date placed the function of construction of sewers in the Bureau of Engineering and the repair and cleaning of sewers in the Bureau of Streets of a newly created Board of Public Works. In 1908, sewer cleaning and repair responsibilities were placed in the Bureau of Sewer Repair and the functions have remained substantially the same since that time.

STREET CLEANING. In the early days of street cleaning, the activity was under an elected Superintendent of Public Streets, Highways and Squares, and after 1879 the cleaning work was done by contract. The contract arrangement continued under the Board of Public Works, which was created in 1900. It was not until after the fire and earthquake that a street cleaning unit was created in the Board of Public Works and separate entity as such was maintained until 1934. That year, street cleaning was placed under the organization of the Bureau of Streets as the Division of Street Cleaning. On July 1, 1950 the Bureau of Streets was divided into two separate bureaus; the Bureau of Street Cleaning and the Bureau of Street Repair.

OCCURRENCES AND CIRCUMSTANCES OF NOTE

Winter storms were exceptionally destructive. Total rainfall for the fiscal year 1951-52 amounted to 32.56 inches, or over 10 inches more than the normal annual rainfall of 22.02 inches. Maintenance crews, complemented only for normal routine work throughout the year, were hard put to take care of the numerous urgent repairs resulting from landslides, stopped and broken sewers, broken pavement and fallen trees. The capable and resourceful response of these crews, during the trying situations that developed, reflect credit upon their Bureau and Department.

Funds in the amount of \$315,000 were appropriated for construction of a new Municipal Asphalt Plant to replace the present obsolete plant that has been in operation since 1915. The new plant will have a capacity of mixing 90 tons of asphaltic concrete materials per hour and should show marked results in reducing the cost of operation. Start of operation of the new plant is scheduled for the latter part of 1953.

A new Adnun Black Top Paver was purchased for the Bureau of Street Repair and will be used on street resurfacing work to replace hand raking methods of resurfacing. The new paver will improve the rideability qualities of asphaltic concrete surfaces and should substantially reduce the cost of work performed.

Shortage in appropriated funds, for materials and supplies to adequately provide for service needs, continues to plague the operating efficiency of bureaus. Appropriations have not kept pace with expanding service requirements and with the increasing costs of materials and supplies. Generally, the bureaus receive about the same allowances as several previous years which results in curtailed purchases in opposite ratio to the inflationary advance of the dollar. Through lack of adequate materials and supplies, our labor forces cannot reach optimum performance and the end result is a loss of work performance much more costly to the City than the amounts saved through curtailment of fund allowances.

A study was made of janitorial services rendered by our 71½ janitors in public buildings and on the basis of recommendations, changes in assignments and shift hours were placed in effect July 1, 1952. These changes should increase the work potential of janitorial forces at a little less cost in labor expenditures.

A total of 16,969 catch basins were cleaned this year by the Bureau of Sewer Repair in comparison with 15,458 basins cleaned during the previous year. About 25,000 catchbasins exist in the City and County of San Francisco. The results of the past year show that average basin cleaning time was reduced nearly 14 percent and that despite increased costs of eductor operation of nearly 12 percent, mainly due to wage increases, the average cost

of cleaning catchbasins decreased over 2 percent.

During the year, 781 side sewer installations were completed, for a total length of 14,360 lineal feet, at a total cost of \$125,457.

Cost of operating and maintaining the three lift bridges amounted to \$128,600 for the year. Total number of openings during the year, for the three bridges, amounted to 2237, or an average cost of about \$57.50 per bridge opening. Investigative means for reducing operating costs are in progress and some relief is anticipated in the early part of fiscal year 1952-53.

Lack of sufficient clerical assistance to the bureaus, notably the Bureau of Building Repair, has resulted in extensive necessary clerical work being performed by supervisory personnel at the expense of providing proper supervision in the field. Supplying temporary personnel for this work is of little help as temporary appointees generally receive permanent appointments to other departments even before completing their indoctrination in the office where temporarily assigned. It is estimated that the Superintendent of Building Repair spends 90 percent of his time and the Ass't. Superintendent, 50% of his time on necessary clerical duties. Such required clerical work by supervisory personnel results in considerable monetary loss to the City by not providing complete supervision to the many field activities of the bureau, - a loss that is conjectural but at least in excess of \$40,000 annually. Additional clerical assistance has been requested without success in the past two budget requests of the department.

Fund deficiencies for Repair and Maintenance of Public Buildings are proving to be a costly policy. Annual funds for the past 5 years have ranged between \$75,000 and \$100,000 whereas annual appropriations should provide at least \$280,000, at today's costs, for proper maintenance and repair.

The firm of Griffenhagen and Associates, Consultants in Public Administration and Finance, was retained by the City to make a study of the Department of Public Works. A report rendered under date of January 9, 1952 is under careful review as to changes that may be beneficial and practicable for the maintenance and operating bureaus.

Operations thus far at the New Yard show the need of obtaining the adjacent old Incinerator Site for purposes of providing space facilities for necessary operations of the bureaus. The Incinerator Site is under a 10-year lease that will end May 14, 1953. Upon acquiring use of this site for the above purposes, the present Yard at Harrison and Alameda Streets can be released from use by the Bureau of Building Repair.

EXPENDITURES

The total expenditures for the four Maintenance and Operation bureaus amounted to \$5,354,932 in 1951-52 compared with \$5,230,663 in 1950-51; an increase in expenditure of \$124,269 or about 2.4 percent. Expenditures of these bureaus are compared below:

Bureau of Building Repair	1950-51	1951-52
Budget	\$ 740,816.00	\$ 773,627.58
Interdepartmental	1,325,132.54	1,336,084.80
Total	\$2,065,948.54	\$2,109,712.38
Bureau of Street Cleaning		
Budget	1,254,348.00	1,332,661.51
Interdepartmental	52,972.81	55,265.32
Total	\$1,307,320.81	\$1,387,926.83
Bureau of Sewer Repair		
Budget	609,163.00	602,038.70
Interdepartmental	837.68	5,240.79
Side Sewers	128,850.00	110,643.88
Sewage Pumping Stations	52,581.00	59,764.18
Total	\$ 791,431.68	\$ 777,687.55
Bureau of Street Repair		
Budget	\$ 776,548.00	\$ 829,717.34
Interdepartmental	186,400.75	201,174.24
Bridges	103,013.00	128,601.40
Total	\$1,065,961.75	\$1,159,492.98

PERSONNEL

Personnel in the four Maintenance and Operation bureaus decreased from an average total of 975 employments for fiscal year 1950-51 to an average total of 943 employments for fiscal year 1951-52; an average net decrease of 32 employments, or a decrease of over 3 percent. The decrease in employments was mainly due to delays encountered in obtaining job replacements and only slightly due to varying labor demands.

The average salary or wage for employments in the Maintenance and Operation bureaus increased from \$3,925.87 in 1950-51 to \$4,363.97 in 1951-52, an increase of \$438.10 or 11.16 percent. Average number of employees, budgeted and interdepartmental, and average salary or wage for each of the Bureaus during the past two years are compared as follows:

Bureau	Average No. of Employees		Average Yearly Salary	
	1950-51	1951-52	1950-51	1951-52
Sewer Repair:				
Sewer Maintenance	128	120	\$3,974.45	\$4,321.12
Pumping Stations	8	8	3,904.25	4,654.83
Street Repair:				
Street Maintenance	167	160	3,558.60	3,904.24
Bridge Operation	23	23	4,103.94	4,533.89
Street Cleaning:	324	319	3,634.84	4,007.86
Building Repair:	325	313	4,379.18	4,761.91

Thirty-two employees retired from the Maintenance and Operation Bureaus during the past year, after many years of meritorious service. In addition, these bureaus lost 12 valued employees or past employees through death. A complete list giving names and length of service will be found in Appendix V.

BUREAU OF STREET REPAIR

W.S. Merrill, Superintendent

FUNCTIONS

The Bureau of Street Repair maintains and repairs approximately 800 miles of accepted City streets and highways, including adjacent curbs, fences, stairways, retaining walls and drains. It also maintains and operates an asphalt plant, a stone dressing yard and three lift bridges; maintains two dumps; and performs work both 'on street' and 'off street' for other City departments. Emergency work, such as keeping in excess of 100 miles of dedicated but unaccepted streets safe for passage, clearing streets of debris, protecting public property from slides and washes and protecting traffic from other dangers, is also a function of this Bureau. Only minor new construction can be undertaken. The expenditure on any one project is limited to \$2,000 by the City Charter.

ORGANIZATION

Under the general supervision of the Superintendent, the work of the Bureau is divided among four main divisions: Asphalt, Concrete, Crack Sealing and Bridges.

The Asphalt Division, under the supervision of General Foreman John Barry, is composed of the asphalt plant, six asphalt paving crews, two pavement breaking crews and two cleanup crews.

The Concrete Division, under the supervision of General Foreman Thomas Breslin, is composed of three concrete crews, one pave-

ment breaking crew, one curb setting crew, one curb redressing crew and three cleanup crews.

The Crack Sealing Division, under the supervision of General Foreman W.S. Balk, is composed of four sealing crews. These crews are specially equipped.

Operation of the three lift bridges is under the supervision of Chief Operating Engineer John Donaldson whose part time services are secured from the Bureau of Building Repair by work order.

OPERATIONS

Work to be done by the Bureau is determined both by survey and by the receipt of requests and complaints. Four asphalt paving crews are of a roving nature and are kept busy satisfying daily complaints. There is little chance to program this type of work. Two asphalt paving crews are usually engaged in resurfacing with a considerable amount of work laid out at all times.

The concrete and curb crews are usually kept busy satisfying daily complaints and requests. When time permits a program is established for a systematic attack on a particular type of work. The sealing crews operate in much the same manner as the asphalt resurfacing crews.

WORK PERFORMED

Following is a tabulation of the major items of work performed during the past fiscal year:

Resurfacing, hot asphaltic mixtures 113 blocks or major portions thereof	1,062,000 sq. ft.
Patches, hot asphaltic mixtures	1,450,500 sq. ft.
Patches, emulsified asphalt armour coat	631,100 sq. ft.
Cracks sealed	942,100 lin.ft.
Brick and concrete pavement repaired or replaced	7,200 sq. ft.
Concrete sidewalk replaced	24,200 sq. ft.
Concrete and granite curb reset or replaced	17,600 lin.ft.
Granite curb redressed	6,300 lin.ft.
Asphalt Plant output	31,760 tons

In addition to the above the Bureau put in a busy winter clearing streets and protecting public property from slides and

washes caused by unusually heavy rains. There was also a considerable amount of work involved in the construction of traffic channelizing islands, placing and removing raised pavement bars, removing painted traffic stripes, providing drainage and other miscellaneous items.

With the exception of work done for other departments or chargeable to special gas tax funds, all work is financed by monies appropriated from the Special Road Improvement Fund by the Board of Supervisors and carefully budgeted for the use of the Bureau. The Bureau was reimbursed for the cost of work ordered by other departments and for work chargeable to the Special Gas Tax Fund in the total amount of \$201,174.

EXPENDITURES

Expenditures for the fiscal year 1951-1952 totaled approximately \$1,159,500. broken down as follows:

Labor	\$ 573,200
Material & Supplies	186,100
Equipment	83,900
Work by Other Departments	54,200
Overhead	133,500
Bridge Operation	128,600
Total	1,159,500

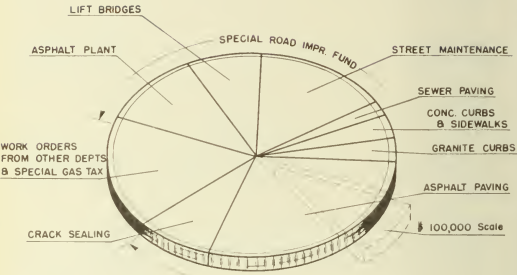
The breakdown by types of work was as follows:

Asphalt Paving and patching	391,500
Surface and Crack Sealing	101,800
Curbs and Sidewalks	97,500
Safety, Emergency, Miscellaneous Repairs	206,900
For Other Departments	103,700
State Highways and Major Streets	129,500
Bridge Operation	128,600
Total	\$1,159,500

PERSONNEL AND EQUIPMENT

The Bureau's employments, as set forth in the 1951-1952 Salary Ordinance, totaled 207 positions classified as follows:

1 Superintendent	26 Chauffeurs
3 General Foremen	4 Granite Cutters
1 Foreman, Asphalt Plant	35 Asphalt Workers
1 Paver	16 Asphalt Finishers
3 Cement Finishers	12 Asphalt Subforemen
5 Cement Finishers Helpers	1 Asphalt Finisher Foreman



EXPENDITURES



65



183

BUREAU OF
STREET REPAIR

62 Laborers	14 Operating Engineers
4 Labor Foremen	12 Watchmen
4 Engineers, Hoist & Portable	3 Mixermen

During the fiscal year 1951-1952 the Bureau acquired a black top paver, a truck loader, a tip trailer and a compressor.

The Bureau now operates the following major equipment:

4 Power Rollers	1 Tractor Surface Heater
1 Tractor & Bulldozer	6 Spray Machines
1 Power Grader	1 Concrete Saw
1 Tractor Crane	1 Trailer Mounted Compressor
1 Tractor Sand Loader	1 Tip Trailer
4 Trucks with compressors and special equipment	4 Trucks with compressors
25 Trucks of various types and sizes	9 Trucks & Drivers (rented)

BUREAU OF SEWER REPAIR

Emile F. Muheim, Superintendent

FUNCTIONS

The Bureau of Sewer Repair maintains, repairs and operates the 790 miles of collecting system for San Francisco storm waters and sewage. This includes sewers, catchbasins, diversion structures, manholes, side sewers and twelve sewage pumping stations, all of which comprise the system through which sewage is collected and, in most areas of the City, is transported to the sewage treatment plants or to the bay or ocean. The operation and maintenance of the sewage treatment plants is a function of the Bureau of Engineering.

A recent California State Supreme Court decision holds that side sewers in San Francisco are private property. This view was held by the City government and confirms the existing City policy that the property owner is responsible for the expense of constructing, maintaining and repairing the side sewer between the main sewer and the sidewalk trap. All work on side sewers is done by this Bureau and the cost is billed to the property owner.

OPERATIONS

The removal of the street car tracks from most of the city's streets has been of tremendous value to the Bureau. No longer must rails be supported to maintain traffic while reconstructing sewers in the center of these thoroughfares. The new type of sewer cleaning equipment may now remain in place when in operation and no longer need be moved back and forth to allow street cars to pass. Of still further value to the Bureau is the greater accessibility allowed to the underground sewer structure.

The winter of 1951-52 was decidedly a wet one and between

July 1, 1951 and June 30, 1952 there was a total rainfall of 32.56 inches, an increase of 10.46 inches above normal. The severity of the weather is shown by the fact that in December and January, a total of 1700 complaints were processed or serviced. An incident of considerable magnitude occurred during this period when on the morning of Monday, December 3, 1951, due to heavy rains and a collapsed sewer, the home at No. 1 Castenada Avenue was undermined, slid down the embankment and collapsed. The house was a total loss. The cause of the sewer failure is still undetermined.

In November 1951 a Sewer Survey and Gas Detection Unit was formed to investigate the physical and gaseous condition of the sewerage system. This unit consists of a panel truck equipped with detection equipment operated by an engineering chemist, one sewer-cleaner and one laborer. Because of the lack of funds the unit became inoperative in March 1952 but within this four months period 2977 manholes were tested. Of these, 19 manholes showed definite explosive properties, having a content of over 60% of an explosive gas and air mixture. The Pacific Gas and Electric Company is notified when these conditions are detected, so that they may have the opportunity of determining whether their gas lines are leaking. Tests are made at each manhole for the presence of explosive gases, hydrogen sulphide, carbon monoxide and for a deficiency of oxygen. It is the present plan to continue the survey until the entire sewer system is thoroughly investigated and the proper rechecks are made.

Operations of the Bureau for the fiscal year cost a total of \$777,687. The normal complement of personnel, which is rarely filled due to retirements and other labor turnover, totals 138, as follows:

1 Superintendent	3 General Foremen
2 Asst. Superintendents	6 Bricklayers
1 Asst. Engr. Electrical	11 Hodcarriers
1 Junior Engineer, Civil	50 Cribbers
5 Junior Oper. Engrs.	9 Chauffeurs
2 Operating Engineers	29 Laborers
1 Clerk-Typist	17 Sewer Cleaners

The average daily number of workers is 128.

In addition, 5 contract flushing trucks with drivers and 6 contract material trucks with drivers are employed by the Bureau.

The following equipment owned by the City was used during the year:

- 10 Elgin Eductors, for cleaning catchbasins (Including 2 Stand-bys)
- 1 110 Air Compressor, mounted on truck, for pavement breaking
- 2 110 Air Compressors, trailer type, for pavement breaking

- 6 Power Driven Sewer Cleaning units, motorized
- 2 Pumps, trailer type, pump manholes and flooded ditches
- 2 Pumps, portable type, pump manholes and flooded ditches
- 2 Blowers for ventilating sewers
- 3 Lighting Units. Night emergency use
- 8 Supervisory automobiles
- 1 Truck for gas detection crew
- 1 Mosquito Exterminator, trailer type
- 1 Flexible rod unit complete, trailer type
- 1 Flexible rod unit motor

Service calls, an important phase of the Bureau's activities, receive prompt action in the interests of public health, safety, protection of property, avoidance of further major troubles and good public relations. There were 6918 calls during the year, usually by telephone, day and night, or through the systematic check of the system. They include such items as cave-ins of streets, choked sewers, sewer failures, minor leaks, odors, pump failures and lost articles.

SEWAGE PUMPING STATIONS

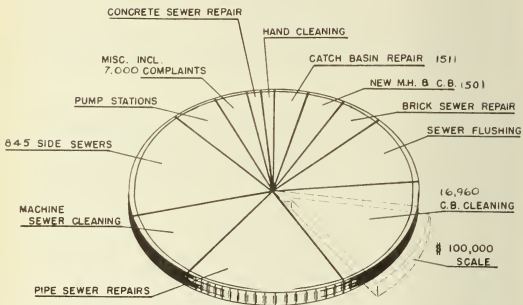
The operation and maintenance of the twelve sewage pumping stations is under the jurisdiction of this Bureau.

The pumping stations are located in low-lying areas of the city which cannot be drained by gravity into existing main sewers. Stations are generally designed and constructed for capacities sufficient to handle all sanitary sewage and, in addition, to take care of a rain storm of .02 inches per hour intensity. All stations, with one exception, are provided with overflow spillways so that run-off beyond the capacity of the station is discharged directly into the ocean or bay. In most cases the stations have sufficient capacities so that one pumping unit can be shut down for repair during the dry season.

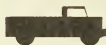
All of the pumping stations are operating with automatic controls. At two of the larger stations, namely, Marina and Commercial, operators are on duty during two eight-hour shifts per day, (8:00 A.M. to 12:00 P.M.). At each of two other stations, Seacliff No. 2 and Park Merced, an operator is on duty for a single shift each day (8:00 A.M. to 4:00 P.M.) to perform maintenance work and make required adjustments.

Operating Personnel for these twelve stations consisted of:

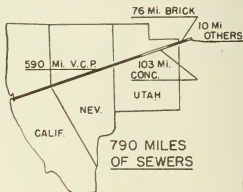
- 1 Assistant Engineer, Electrical
- 2 Stationary Operating Engineers
- 5 Stationary Junior Operating Engineers



EXPENDITURES



54



16,660 CU. YDS.
SILT REMOVED



24 HOUR
OPERATION

BUREAU OF SEWER REPAIR

EXPENSES FOR THE YEAR

Total Salaries	\$ 36,870.91
Electric Power	12,629.86
Maintenance	10,263.41
Total Expenditures	\$ 59,764.18

Descriptive information for each of the 12 stations will be found in Appendix III.

BUREAU OF STREET CLEANING

Wm. T. Bonsor, Superintendent

FUNCTIONS

This Bureau has the responsibility for the cleanliness of the 800 miles of paved and accepted City streets. Such operation involves the cleaning of the following:

- 1600 curb miles of streets,
- 50 miles of center island curbs
- 6 underpasses
- 35 sets of pedestrian steps
- 5 parade routes

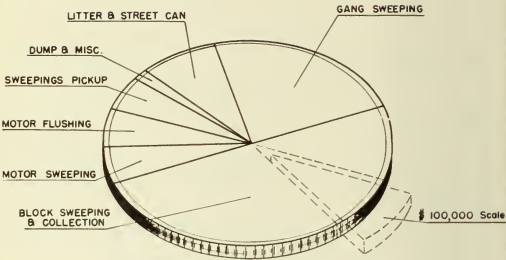
In addition all City-owned vacant property must be kept free of debris and 3 City-controlled dumps are operated.

OPERATIONS

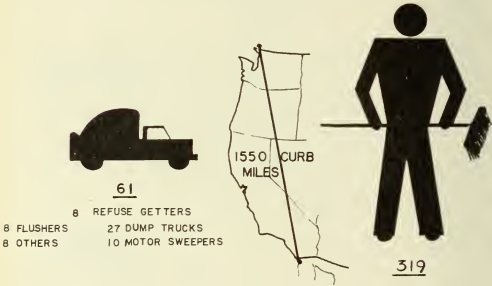
The Bureau of Street Cleaning performs its functions through the Bureau Superintendent and his four district directors, each of whom is responsible within a sector of the City for (1) sweeping and collection gangs, (2) refuse collection and disposal, and (3) street cleaning by motor flushing and motor sweeping. Regular studies are made to obtain a systematic and economical coverage of the City and to use the type of cleaning best adapted to conditions. Motor flushing and hand sweeping are better adapted to areas of heavy curb parking than motor sweeping. The motor flushing has been very effective on streets with a decided grade. Over 200 waste paper receptacles of heavy galvanized wire, placed near the curbs this year, have been effective in reducing litter. Programs are planned to obtain further assistance from the public and to improve cleaning operations including more efficient methods of refuse loading.

These operations are summarized best by the following statistics:

- 231,726 miles of motor truck operation
- 433,719 cu. yds. of street dirt removed
- 30,628 miles of sweeper operation
- 70,876 miles of motor flushing



EXPENDITURES



BUREAU OF
STREET CLEANING

The Bureau operates with the following personnel:

1 Superintendent	49 Chauffeurs
4 District Directors	252 Laborers
12 Sub-Foremen	1 Gardener

319 Total Personnel

BUREAU OF BUILDING REPAIR
Harry H. Hanssen, Superintendent

FUNCTIONS

The Bureau of Building Repair furnishes labor and materials for the maintenance and alterations of city-owned buildings that are under control of the Director of Public Works. Similar services are performed for the Board of Education and other municipal departments under a work order procedure.

Labor and material are furnished for traffic striping, marking of pedestrian lanes at street intersections and marking curbs for loading and parking zones, bus stops and safety zones.

In addition to maintenance and alteration work, this Bureau furnishes operating personnel for the City Hall, Hall of Justice, Health Center Buildings, Emergency Hospitals, Police Stations and Fire Houses, and is also responsible for the operation of the Civic Center Power House which furnishes heat to the Civic Auditorium, Public Library, Health Center Buildings and City Hall.

OPERATIONS

The classification and number of employees as set up in the 1951-52 salary ordinance follows:

1 Superintendent	2 Working Foremen Janitors
1 Asst. Superintendent	64 Janitors
2 Chief Operating Engineers	2 Janitresses
9 Operating Engineers	1 Sub-Foreman Window Cleaner
6 Jr. Operating Engineers	6 Window Cleaners
1 Supervisor of Janitors	16 Elevator Operators
3 Foreman Janitors	4 Watchmen

The total number of men employed in the mechanic and building crafts will vary according to the needs of other City departments within the following limits:

1 Gen. Foreman Carpenter	4 Locksmith
1 Gen. Foreman Cement Finisher	4 Foreman Painters
1 Gen. Foreman Painter	41 Painters
1 Gen. Foreman Plumber	3 Plasterers
1 Gen. Foreman Sheet Metal	28 Plumbers
1 Gen. Foreman Steamfitter	14 Sheet Metal Workers

CENTRAL PERMIT BUREAU
S.J. Rosenblum, Supervisor

FUNCTIONS

In consonance with Chapter X, Article I, of the Public Works Code (Ordinance 9132 New Series, Board of Supervisors), the principal function of this Bureau is the reception and recordation of Applications and the processing of same pursuant to the above ordinance. Upon receipt of the necessary approvals, the Bureau issues permits predicated upon the above stated Applications.

Statistics compiled by the senior clerk (acting as statistician of the Office) show that the activities of the fiscal year being reported upon remained stable with those of the prior year 1950-1951.

In addition to his other duties, the supervisory head of the Central Permit Bureau also acts in the capacity of Cashier of the Department of Public Works. All receipts of the Department are handled by him and cleared for daily deposit with the City and County Treasurer pursuant to Section 82 of the Charter.

The personnel of the Central Permit Bureau, as of June 30th, 1952, was as follows:

- 1 Supervisor
- 1 Cashier (Electrical Division)
- 2 Senior Clerks
- 1 General Clerk (position unfilled)
- 1 General Clerk-Stenographer
- 5 General Clerk-Typists

WORK PERFORMED

Enumerated below, are some of the major projects for which Building Permits were issued during the fiscal year being reported upon:

3 Story Class '1-B' Parochial School	\$ 400,000
Class '1-A' Pump Station (Lake Merced)	850,000
Alterations to Flood Building	700,000
3 Story '1-B' Public Garage	800,000
Public School - Board of Education	630,000
Alterations to Stores (Stonestown)	881,000
7 Story Class '1-B' Permanente Hospital	2,350,000
Public School - Board of Education	1,611,331
4 Story '1-A' Convent	750,000
2 Story Class 3 Cold Storage Plant	450,000
1 Story Class 3 Retail Stores (Stonestown)	633,500
Additions to Abraham Lincoln High School	2,837,000
Public School - Board of Education	1,089,000
Public School - Board of Education	1,017,568
Public School - Board of Education	728,154

Comparative Statement of Permits Issued
Permits

	1951-52	1950-51	1949-50
Buildings	7,292	8,808	8,896
Billboards	196	130	444
Boiler Installations	169	182	190
Boiler Inspections	1,361	1,023	1,370
House Moving	126	91	86
Demolitions	125	153	112
Flue Registrations	36	45	49
Flue Permits - New Buildings	33	45	36
Flue Permits - Old Buildings	90	71	115
Flue Coupon Books - New Buildings	37	90	79
Flue Coupon Books - Old Buildings	27	11	18
Construct Sidewalks	18	16	15
Street Space	837	1,210	1,395
Excavations	678	1,095	1,132
Side Sewers	655	896	898
Excess Cost - Side Sewers	268	328	176
Sidewalk Flower Markets	41	44	36
Blasting	10	5	6
Advertising	23	23	30
House Number Certificates	793	1,397	1,423
Payments for Surveys	32	44	47
Payments for Engineering Inspection	64	81	81
Payments for Street Improvement Bonds	66	59	40
Public Utilities Street Openings	10,333	9,464	9,317
Posting Notices	674	1,159	1,152
Total Number of Permits Issued	23,984	26,470	27,143

Refunds made from Special and Trust Funds

Special Permit Fund (St. Space and Sub-Sidewalks) House Moving Fund Excavations Side Sewers: Refunds to Depositors Installation Costs credited to General Fund Deposits on Plans Street Improvement Bonds	1951-52		1950-51		1949-50	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
	589	\$ 24,300.00	956	\$ 40,070.00	528	\$ 23,540.00
	2	200.00	2	200.00	12	1,200.00
	66	2,156.50	47	1,007.50	44	715.00
	711	28,799.07	891	36,325.77	726	31,461.48
		118,040.93		132,879.23		107,534.88
	1,476	42,475.00	1,300	31,155.00	1,729	45,985.00
	-	-	-	4,483.35	-	-
	2,844	\$215,971.50	3,196	\$246,120.85	3,039	\$210,436.36

Report of House Numbering Activities

House Numbers Issued: Private Construction Investigations made and Complaints Adjusted Changes in House Numbering Ordered Inquiries from Banks, Title Insurance Companies, General Public, etc. answered	1951-52		1950-51		1949-50	
	1,390		3,170		3,471	
	1,100		1,300		1,200	
	140		165		175	
	3,000		3,000		3,200	

Additional Non-Revenue Activities

Inquiries pertaining to age and class of buildings, and other information requiring reference to old applications on file Plans brought from the basement by request for reference purposes and photostating	1951-52		1950-51		1949-50	
	10,000		9,500		9,250	
	1,700		1,650		1,500	

Cashier's Report

Source of Receipt

Street Space Permit Deposits	\$ 20,340.00
Sub-Sidewalk Permit Deposits	--
House Moving Permit Deposits	100.00
Side Sewer Permit Deposits	132,055.00
Deposits on Plans	45,950.00

Excavation Permits

Special Deposits	\$ 1,437.80	
Fees for:		
Excav. (Special Deposits)	261.00	
(Public Utility Corporations)	15,648.75	
(Lowering Curbs, etc.)	1,743.00	19,090.55
Building Permits	152,441.30	
Billboard Permits	603.00	
Demolition Permits	1,380.00	
Boiler Installations	934.00	
Boiler Inspections	5,729.00	
Use of Street Space	15,549.55	
House Number Certificates	2,813.00	
House Moving Permits	1,640.00	
Flue Registrations	720.00	
Flues - New Buildings	16.50	
' - Old Buildings	180.00	
' - New Buildings (Coupons)	462.50	
' - Old Buildings (Coupons)	540.00	
Posting Notices	1,804.75	184,813.60
Fees - Sidewalk Flower Markets		1,440.00
Side Sewers - Excess Cost		7,754.32
Advertising Charges		2,802.43
Payments on Street Improvement Bonds		21.00
Payments on Street Improvement Bonds (Ord. of 1934)		7,980.94
Fees for Surveys		10,100.00
Fees for Inspections		18,574.47
Misc. (See Monthly Reports for itemized detail)		7,077,805.74
Total Receipts		\$7,528,828.05

Note: 18 Sidewalk Permits Issued
No Fees Charged

Deposits with City and County Treasurer
Classified by Funds

General Fund

Street Space & Sub-Sidewalk		\$ 20,340.00
House Moving		100.00
Side Sewer Deposits		132,055.00
Deposits on Plans		45,950.00

Surveys	\$ 10,100.00	
Inspections	18,574.47	28,674.47

Excavations		
Deposits	1,437.80	
Fees	17,652.75	19,090.55

Advertising		2,802.43
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Street Improvement Fund		21.00
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Street Improvement Fund (Ord. of 1934)		7,980.94
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Side sewers - excess costs		7,754.32
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Fees

Building Permits	152,441.30	
Billboard	603.00	
Demolitions	1,380.00	
Street Space	15,549.55	
House Numbers	2,813.00	
House Moving	1,640.00	
Boiler Installations	934.00	
Boiler Inspections	5,729.00	
Flue Registrations	720.00	
Flues - New Buildings	16.50	
Flues - Old Buildings	180.00	
Flues - New Buildings (Coupons)	462.50	
Flues - Old Buildings (Coupons)	540.00	
Posting Notices	1,804.75	184,813.60
Sidewalk Flower Markets		1,440.00

Miscellaneous Funds

General Fund	12,603.96	
Special Road Improvement Fund	2,366,013.37	
State Highway Trust Fund	422,406.76	
Special Gas Tax Street Improve- ment Fund	2,824,486.10	
1944 Sewer Bond Fund	1,393,306.75	
1948 School Bond Fund	124.37	
Library Fund	300.00	
S.F. Unified School District	150.00	
1947 Street Improvement Bond Fund	58,414.43	7,077,805.74

Total Deposits with City & County Treasurer		\$7,528,828.05
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Classification of Building Permits Issued

Class or Type	No. of Permits	Estimated Cost	Fees
1-A	6	\$ 4,400,722	
1-B	11	6,948,162	
2	-	-	
3	22	2,749,161	
4	22	549,619	
5	980	15,772,730	
Alterations	6,251	16,607,964	
Totals	7,292	\$ 47,028,358	\$152,441.30
Billboards	196	38,310	603.00
Totals	7,488	\$ 47,066,668	\$153,044.30
(Total number of Building Applications received)			8,789)

Flue Registrations and Permits

Flue Registrations	36	720.00
*Coupon Books - New Buildings	37	462.50
**Coupon Books - Old Buildings	27	540.00
Flue Permits - New Buildings	33	16.50
Flue Permits - Old Buildings	90	180.00
Totals	223	1,919.00

Miscellaneous Permits

To raze Structures	125	1,380.00
To move Buildings	126	1,640.00
Boiler Installations	169	934.00
Boiler Inspections	1,361	5,729.00
Posting Notices	674	1,804.75
Totals	2,455	\$ 11,487.75
GRAND TOTALS	10,166	\$166,451.05

*New coupon books contain
25 Prepaid Coupons

**Old Coupon books contain
10 Prepaid Coupons

Central Permit Bureau

Month	Electrical Inspection Revenue					GRAND TOTAL
	Electrical Inspection	Sign Inspection	Electrical Sales Permits	Contractors Registration	Plant Owners Registration	
1951						
July	\$ 8,944.15	\$ 434.40	\$ 15,250.00	\$ 62.50		\$ 24,691.05
August	7,208.15	422.90	1,876.00	125.00		9,632.05
September	5,994.65	331.05	339.50	62.50		6,727.70
October	9,724.20	453.70	644.00			10,821.90
November	7,375.40	492.50	516.00	62.50		8,446.40
December	6,971.45	469.95	270.00	2,062.50	\$ 350.00	10,123.90
1952						
January	6,234.35	468.10	100.00	10,375.00	462.50	17,639.95
February	7,785.10	605.70	90.00	250.00	25.00	8,755.80
March	6,977.10	622.80	80.00	250.00		7,929.90
April	7,586.15	569.85	120.00	250.00		8,526.00
May	6,950.75	452.00	10.00			7,412.75
June	6,109.00	654.60				6,763.60
TOTALS	\$ 87,860.45	\$ 5,977.55	\$ 19,295.50	\$ 13,500.00	\$ 837.50	\$ 127,471.00

The Bureau of Accounts controls the budgetary and financial activities of the Department. It is the point of origin of documents dealing with the disbursement of funds and channels them through required procedures until final liquidation.

The Bureau has a central office at the City Hall and a division handling operating accounts at the Maintenance Yard, where the greater part of the staff is employed. The latter division was moved on September 1, 1951 to the new yard at Army and DeHaro Streets, where it is housed with the operating bureaus of the department. The quarters are modern and newly equipped and constitute a great improvement over the wooden building occupied for years at 11th and Bryant Streets.

PERSONNEL

The permanent staff of 29 employees consists of:

- 1 - Supervisor in charge of the Bureau
- 2 - Head Clerks
- 3 - Bookkeepers
- 3 - Senior Clerks
- 12 - General Clerks
- 4 - General Clerk-Stenographers
- 3 - General Clerk-Typists
- 1 - Telephone Operator

The assignment of a General Clerk to the Storeroom was eliminated and the duties transferred to a storekeeper assigned by the Purchaser of Supplies. This change was made to conform to charter requirements.

FUNCTIONS AND ORGANIZATION

The operating functions of the Bureau embrace control of pay-toll procedure, personnel records and field-timekeeping; purchase order requisitions; sub-storeroom and inventories; automotive expenditures and gasoline and tire records; work order job costs and invoicing; side sewer job and refunds accounts; State gas tax subventions; the cash revolving fund for the Department; the stores revolving fund; budget preparation and control; operation of the Yard telephone exchange; and the supplying of clerical service to all of the operating bureaus.

Included in the general functions of the Bureau are three well defined sub-divisions; Payrolls and Personnel with 2 Senior Clerks and 5 assistants; Purchasing and Stores with a Senior Clerk and 2 assistants; Gas Tax subventions with a Head Clerk and 3 assistants.

Three field timekeepers check outside operations for payroll verification and also act as paymasters on semi-monthly pay days, delivering pay warrants to employees on the job.

OPERATIONS

Reports to the Director on operations of the Building Repair, Sewer Repair, Street Repair and Street Cleaning Bureaus are prepared monthly by the Bureau of Accounts from the records maintained in the Bureau.

Job costs pertaining damages to City property under the jurisdiction of the Department are compiled and forwarded to responsible parties for collection. These costs amounted to \$9,470.66 for the fiscal year and embraced 150 cases, covering damages to bridges, automotive equipment, street structures, traffic signals, street signs, traffic devices and prisoner damage to police stations. The Bureau handled the fiscal processing of contracts under bond issues for Street Improvements, Sewers, Sewage Treatment Plants, and Schools under programs which are expected to continue into subsequent years.

In the supplying of materials for the varied activities of the department, a sub-storeroom and a material yard are conducted, through which 14,017 transactions were handled involving the delivery of 44,403 items to jobs. Outside purchases from vendors brought about the issuance of 5,601 requisitions and 7,384 delivery orders.

The Stores Revolving Fund under the control of the Bureau is designed to permit the purchase in advance of constantly used materials. Plumbing supplies, electrical items, paints, hardware, lumber, glass, tools, sewer pipe, brick, cement, castings and miscellaneous needs which can be foreseen, are carried in Stores and charged out to the various jobs as used. Controls have been established which facilitate monthly reimbursements for goods withdrawn, and Stores records are maintained on a perpetual inventory basis subject to annual physical check.

The Department Cash Revolving Fund of \$1,500 is used by the Bureau for payment of small bills and transportation charges, and enables workmen on field work to make cash purchases at neighborhood stores thus avoiding trips to downtown establishments. All transactions are conducted under controls set up by Ordinance.

Detailed records of all expenditures are maintained, particularly on jobs performed under work order procedure. In these, the Charter requires that all elements of indirect and supervisory costs be considered and made part of the final job cost. To

accomplish this, indirect labor is pro-rated monthly on an exact percentage basis, as are overhead charges for accident compensation, sick leave, vacation, retirement, equipment replacement and miscellaneous. These items of overhead are accumulated in reserves to meet the requirements designated. Charges for small tools and shop supplies used in work order operations are made against the miscellaneous reserve.

Summary of Transactions

Budgeted Funds, Subject to control and appropriated to:

Bureau of Accounts	\$ 59,141.00
Bureau of Architecture	43,740.00
Bureau of Building Inspection	307,934.00
Bureau of Building Repair	791,214.00
Central Permit Bureau	42,039.00
Bureau of Engineering	394,509.00
Sewage Disposal Plant	699,103.00
General Office	101,708.00
Bureau of Sewer Repair	782,542.00
Sewage Pumping Stations	60,117.00
Bureau of Street Repair	915,774.00
Bureau of Street Cleaning	1,366,979.00
Bridges	123,661.00
Gas Tax (Special Road Improvement)	592,302.00
Special Gas Tax-Street Improvement Fund	2,598,200.00
Gas Tax - Street Construction	879,133.00
Disaster Relief	6,400.00
Total Budgeted Funds	\$9,764,496.00

Interdepartmental service, under work order procedure for:

Schools	\$ 819,407.04
Health	52,644.95
Recreation	30,559.08
Library	20,029.66
Public Building Improvements	71,180.64
Gas Tax Accounts	2,354,684.85
Engineering	7,114.68
Sewage Plants	26,158.79
Public Utilities	28,376.15
General Office	18,917.25
Sewer Bonds	303,538.18
Street Bonds	901,468.93
Sewage Treatment Bonds	284,660.95
Public Welfare	5,630.58
Fire Department	110,874.88
Special Inspection	10,944.28
Juvenile Court Bonds	5,090.32
State Highway Cleaning	55,265.42
Miscellaneous	367,689.93
Paving Side Sewers	33,305.72
School Bonds	232,059.57
Total Interdepartmental Service	\$5,739,601.85

Side Sewer Deposits, for installation and repair,
covering 708 permit deposits for 829
house connections 146,940.00

GRAND TOTAL \$15,504,097.85

BUREAU OF ENGINEERING
CURRENT CONTRACT DATA SUMMARY
Showing all Contract Work Awarded or Under Way
July 1, 1951 to June 30, 1952

Table	Type of Construction	No.	Contracts Awarded Aggregate Value	Amount Expended Fiscal Year 1951-52
A	Major Thoroughfares	7	\$1,244,677.63	\$ 953,818.12
B-1	Streets-Private Contracts	28	381,557.00	401,778.00
B-2	Streets - Assessment Proceedings	26	159,603.00	131,673.31
B-3	Streets - Public Contracts, City Pay	8	81,846.87	90,572.99
B-4	Street Car Track Removal	6	1,139,304.61	1,099,187.74
C	Traffic Signals and Channelization	8	195,834.52	146,358.28
D-1	Sewers, Pipe-Vitrified Clay & Concrete	5	354,849.42	418,459.55
D-2	Sewers-Concrete Monolithic	2	453,150.00	553,451.09
E-1	Sewage Treatment Plants	0	-	3,050,909.43
E-2	Miscellaneous	23	436,002.60	3,532,608.16
TOTALS		113	\$4,446.825.65	\$10,378.816.67

TABLES

On the following pages appear separate tables of current contracts for each of the types of Construction listed above. The source of the funds used to finance each project is indicated in the tables according to the following:

Designation	Abbreviation Legend Description of Fund
General	General Fund City and County
Spec. Rd.	Special Road Improvement Fund
Major Sts.	Special Gas Tax Improvement
State Hwy.	State Highway Fund
Assmt.	Assessed to property benefiting under the Street Improvement Ordinance of 1934
Pd. Prop. Owners	Costs borne by Property Owners under Private Contract
1944 Sewer Bonds	Bond Issue Voted by Citizens on Nov. 7, 1944 - \$12,000,000
1947 St. Imp. Bonds	Bond Issue Voted by Citizens on Nov. 4, 1947 - \$22,850,000
1948 Sewage Tr. Bonds	June 1, 1948 - \$15,000,000

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended	1951-52 Fund
A-Major Thoroughfares					
El Camino Del Mar (In Lincoln Park) Reconstruction (Drainage-Grading-Curbs-Pavement) Eaton & Smith	7-5-50	7-6-51	\$117,537.61	\$ 18,937.61	Spec.Rd. Imp.
Bayshore Blvd. betw. Marin St. and Waterloo St. (Pavement-Curbs-Sidewalk-Track Removal) The Fay Improvement Co.	3-2-51	10-22-51	108,427.01	85,307.01	St.Imp.Bond State Hwy.
Woodside Ave. widening betw. Idora Ave. & Laguna Honda Blvd. (Curbs-Pavement-Sidewalks) The Fay Improvement Co.	4-20-51	2-18-52	126,101.27	123,941.27	St.Imp.Bond Major St. P.U. - Elect.
Resurfacing					
Franklin St. betw. Page & Lombard Sts.					
Baker St. betw. Oak & Fulton Sts.					
Fillmore St. betw. Marina Blvd. & Chestnut St.					
Fell St. betw. Polk & Franklin Sts.					
Gough St. betw. Haight & Lombard Sts.					
Guerrero St. betw. Market & 14th Sts.					
Jefferson St. betw. Fillmore & Webster Sts.					
Oak St. betw. Van Ness & Gough Sts.					

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
A-Major Thoroughfares(Continued)					
Resurfacing Continued					
Sea Cliff betw.25th & 27th Aves.					Major St.
Scenic Way betw.25th & 26th Aves.					Spec.Rd.
So.Van Ness betw.Market & Mission					Imp.
18th St.betw.Guerrero & Folsom					
25th,26th,27th Aves. betw. El					
Camino & Sea Cliff	6-1-51	10-26-51	\$ 85,795.50	\$ 85,795.50	

Golden Gate Park Crossover-State					State
Highway Route #56 (Widening &					Hwy.
Reconstruction)					
Chas. L. Harney, Inc.	9-4-51	99%	138,148.00	128,265.00	
Monterey Blvd.betw.Ridgewood Ave.					Major St.
& San Anselmo Ave.(Widening &					Spec.Rd.
Retaining Wall Reconstruction)					Imp.
Chas. L. Harney, Inc.	9-14-51	21	277,387.50	48,450.00	
Sloat Blvd.-Junipero Serra Blvd.					State Hwy.
to Great Highway(Reconstruction)					Major St.
Chas. L. Harney, Inc.	10-26-51	96	445,987.00	374,340.00	
Guerrero St.& San Jose Ave.betw.					Major St.
Army St. & Randall St.(Widening)					1944 Sewer
Chas. L. Harney, Inc.	12-7-51	32	258,501.10	69,360.00	Bond
Phelan Ave. betw.Ocean Ave. &					Spec.
Judson Ave. (Widening)					Rd.Imp.
Eaton & Smith	4-25-52	8	79,207.50	6,080.00	
10th St.betw.Market St.& Bryant					State Hwy.
St. (Resurfacing)					
Chas. L. Harney, Inc.	5-9-52	6-7-52	13,341.73	13,341.73	
Winston Drive-Lake Merced Blvd.					Spec.Rd.
(E) to existing Pavement					Imp.
(Improvement)					
Chas. L. Harney, Inc.	5-23-52	0	32,104.80	0	
Total Awarded and Expended During Fiscal Year			\$1,244,677.63	\$ 953,818.12	

CURRENT CONTRACT DATA 1951-1952

APPENDIX I

I-4

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts - Pd. Prop. Owners							
Winston Dr. 19th Ave(W $\frac{1}{2}$)	20th Ave.	Winston Dr.	C,P	Stonestown Corp.	6-22-49	95%	\$ 20,000.00
*Colby St. University St. Dwight St.	Woolsey St. Woolsey St. University	Dwight St. Dwight St. Colby St.	C,P	Eaton & Smith	12-7-49	7-13-51	21,300.00
Carver St.	Mayflower	179' S'ly	S,C,P	Eaton & Smith	6-2-50	10-1-51	9,092.00
Massasoit St. Rutledge St.	Franconia Peralta St.	Rutledge	S,C,P	Eaton & Smith	6-21-50	6-1-51	18,000.00
Sherwood Forest (Contr.#1)			S	Lang Const.Co.	7-7-50	99%	8,200.00
Parkmerced Subdivision			C,P	Eaton & Smith	7-21-50	5-11-51	340,000.00
*Harkness Ave.	Rutland St.	Sparta St.	C,P	Bernal Const. Co.	8-3-50	95%	7,300.00
Lakeshore Park Sub. 4-Contr.3			S,C,P	Chas. L. Harney Inc.	10-6-50	10-5-51	10,000.00
15th Ave(E $\frac{1}{2}$)	Lake St.	Presidio	C,P	Eaton & Smith	10-11-50	10-26-50	500.00
Sherwood Forest Contr.2			S	Lowrie Paving Co.	10-20-50	2-11-51	10,000.00

APPENDIX I

Street or Subdivision	From	To	Impts.	Contractor	Awardee	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts - Pd. Prop. Owners (Cont'd)							
*Bright St. Shields St.	Shields St. Head St.	Sargent St. Orizaba St.	S,C,P	Chas.L.Harney, Inc.	11-1-50	10-29-51	\$ 23,600.00
Glenview Drive & Dawnview Dr.							
			S,C,P	Chas.L.Harney, Inc.	11-10-50	10-19-51	18,400.00
Head St.	Palmetto Ave.	De Long St.	S,C,P	Chas.L.Harney, Inc.	11-15-50	10-30-51	5,600.00
*Wayland St.	Hamilton St.	Bowdoin St.	S,C,P	Chas.L.Harney, Inc.	12-22-50	6-29-51	5,000.00
*Hamilton St. Stonestown Subdivision	Dwight St.	Woolsey St.	S,C,P	Fay Impr.Co.	3-2-51	6-18-52	7,900.00
*Olmstead St.	University	Bowdoin St.	S,C,P	Fay Impr.Co.	3-9-51	9-19-51	17,100.00
**Carver St.(E½)	Mayflower	Bernal Heights	S,C,P	Eaton & Smith	3-16-51	10-4-51	2,850.00
*Goettingen St.	Wilke St.	Campbell Ave.	S,C,P	Bernal Const. Co.	3-16-51	10-30-51	9,000.00
*Burnham St.	25th St.	Clipper St.	S,C,P	Fay Improv.Co.	3-23-51	10-19-51	5,700.00
Colby St.	Olmstead St.	Mansell St.	S,C,P	Fay Improv.Co.	3-28-51	9-17-51	12,800.00
*Bowdoin St.	Olmstead St.	Mansell St.	S,C,P	Fay Improv.Co.	3-28-51	10-18-51	8,400.00
Orday St.	Brussels St.	Goettingen St.	S,C,P	Fay Improv.Co.	3-30-51	80%	6,300.00

Street or Subdivision	From	To	Impmts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Ocean Ave(N½)	Private Contracts	Pd. Prop.	Owners				
	Everglade Dr.	Clearview Dr.	C	Chas. L. Harney, Inc.	5-11-51	9-12-51	\$ 800.00
Lake Merced Blvd. (San Mateo Co.)			P	Henry Doelger	5-29-51	9-19-51	20,853.00
Clayton & 17th			C, W	Lowrie Paving Co.	5-29-51	8-3-51	1,200.00
Holloway Ave.	Stratford Dr.	120' E'ly	S	Stonecrest Corp.	6-15-51	7-23-51	1,300.00
Lake Merced School Site			S	M. J. Lynch	6-22-51	9-19-51	58,500.00
Army St. Marin St.	Michigan St. Illinois St.	Louisiana Michigan St.	P, S, C	Eaton & Smith	7-13-51	99%	69,760.00
Michigan St.	Army St.	Marin St.	S, C, P	Fay Impr. Co.	7-13-51	60%	9,600.00
*Darthmouth St. Stanley Drive	Olmstead St. S-Junipero Serra	Mansell St.	S	Eaton & Smith	7-13-51	1-30-52	1,775.00
Marin St.	3rd St.	Illinois St.	C, P	Pacific Pave- ments.	8-1-51	12-24-51	6,300.00
*Darthmouth St.	Dwight St.	Woolsey St.	S, C, P	Fay Impr. Co.	8-8-51	60%	8,500.00
*Goettingen St.	Mansell St.	310 'S	S, C, P	Fay Impr. Co.	8-15-51	60%	7,900.00
*Darthmouth	Dwight St.	Olmstead St.	S, C, P	Fay Impr. Co.	8-15-51	40%	8,200.00
Molimo Drive	Dorcas Way	Teresita Blvd.	S	Fay Impr. Co.	8-17-51	80%	46,800.00
Sloat Blvd.	Everglade Dr.	Clearfield Dr.	C, P	Chas. L. Harney, Inc.	8-17-51	99%	8,000.00
Sunglow Lane	Silver Ave.	Gladstone Dr.	Sty.	The Stonecrest Corp.	9-7-51	9-26-51	1,500.00

APPENDIX I

CURRENT CONTRACT DATA 1951-1952

Street or Subdivision	From	To	Impmts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts - Pd. Prop. Owners (Cont'd)							
Buckingham Wy	Winston Dr	20th Ave	C,P	Stoneson Develop.Corp.	9-7-51	99%	\$ 50,000.00
Allan St	San Mateo Co. Line	160' N	S,C,P	The Fay Impr.Co	9-21-51	11-13-51	4,000.00
Bird St.	E.Dearborn	-	S	E.J.Treacy	10-3-51	2-14-52	1,172.00
*Los Palmos Dr	Foerster St.	Teresita Blvd	S,C,P	The Fay Impr. Co.	10-3-51	10%	19,500.00
Waterloo St	Bayshore Blvd	Loomis St	C,P	The Fay Impr. Co.	10-17-51	40%	7,050.00
Parnassus Ave	Univ.of Calif.		S	E.J.Treacy	10-17-51	30%	4,000.00
Midtown Ter.#2	Streets With- in		S,C,P	Chas.L.Harney	11-16-51	60%	30,000.00
19th Ave.	So.Rossmoor Dr.		S	M.J.Lynch	12-21-51	95%	50,000.00
*Campbell Ave	Elliot St.	Delta St.	C,P	Bernal Constr. Co.	1-23-52	60%	10,200.00
*Peralta Ave	Esmeraldo Ave.	Mayflower St.	C,P	Sibley Gr.Co.	2-6-52	0%	5,300.00
Hollister Ave.	E.of Hawes	-	S,C,P	Fay Impr. Co.	3-21-52	0%	7,200.00
Peralta Ave.	Mayflower St.	Powhattan Ave	S,C,P	Fay Impr.Co.	3-26-52	40%	5,300.00

CURRENT CONTRACT DATA 1951-1952

APPENDIX I

I-8

Street or Subdivision	From	To	Impr'ts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts - Pd. Prop. Owners (Cont'd)							
Warren & Locksley	Lawton Hgts.	-	G	Eaton & Smith	4-4-52	0%	\$ 8,500.00
*Burnham St.	24th St.	25th St.	S,C,P	Pay Impr.Co.	4-11-52	0%	10,100.00
*Mangels Ave.	Detroit St.	Congo St.	C,P	Pay Impr.Co.	4-25-52	0%	12,400.00
*24th St.	Burnham St.	Fountain St.	C,P	Pay Impr.Co.	4-30-52	0%	4,500.00
Harrison St.	14th St.	15th St.	C,P,C.B.	Pacific Pave. Co.Ltd.	5-9-52	5-22-52	3,000.00
Corwin St.	Douglass St.	W.Termination	S,C,P	Pay Impr.Co.	5-23-51	0%	26,000.00
Total Awarded during Fiscal Year							\$381,557.00
Total Value of Work done during Fiscal Year							401,778.00

*Remaining portions of street improved under assessment proceedings.

**Remainder improved under Public Contract - City Pay

S = Sewers G = Grading P = Paving C = Curbs W = Sidewalk C.B. = Catchbasin

Sty = Stairway

CURRENT CONTRACT DATA 1951-1952

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings							
*Colby St	Woolsey St.	Dwight St.					
University St.	Woolsey St.	Dwight St.					
Dwight St.	University St.	Colby St.	S,C,P	Eaton & Smith	12-7-49	7-13-51	\$15,479.47 (6,044.64)-
Harkness Ave.	Rutland St.	Sparta St.	C,P	Bernal Constr. Co.	8-23-50	95%	2,929.00 (1,500.00)-
Harkness Ave.	Adler St.	Rutland St.	S,C,P	Bernal Constr. Co.	8-23-50	95%	6,459.80 (2,400.00)-
Golden Gate Hts. (Pav. Contr. 4)			C,P	Chas. L. Harney, Inc.	8-23-50	6-29-51	44,779.57 (18,930.41)-
*Bright St.	Shields St.	Sargent St.					
Shields St.	Head St.	Orizaba St.	C,P	Chas. L. Harney, Inc.	11-1-50	10-29-51	10,501.72 (5,463.78)-
Shields Street	Bright St.	X-ing	S,C,P	Chas. L. Harney, Inc.	11-22-50	10-29-51	3,372.51 (407.35)-
Head St (W $\frac{1}{2}$)	Palmetto Ave.	170' South	C,P	Chas. L. Harney, Inc.	11-15-50	10-30-51	3,101.87 (770.38)-
Wayland St. (N $\frac{1}{2}$)	Hamilton St.	100' W'ly	C,P	Chas. L. Harney, Inc.	12-22-50	6-29-51	1,476.76 (895.26)-
Rutledge St.	Peralta Ave.	Intersection					
	Franconia St.		S,C,P	Eaton & Smith	1-17-51	6-1-51	4,287.77 (1,329.72)-

CURRENT CONTRACT DATA 1951-1952

APPENDIX I

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings (Cont'd)							
*Goettingen St	Wilde Ave	Campbell Ave	C,P	Bernal Constr. Co.	1-26-51	10-30-51	\$ 5,570.55 (2,238.78) -
Hopkins Ave	Burnett Ave	Corbett Ave	S	E.J.Treacy	2-2-51	4-12-51	(2,853.47 474.07) -
Olmstead St (Crossing)	University St	Bowdoin St	S,C,P	Fay Impr.Co.	3-2-51	10-3-51	(13,883.27 3,187.20) -
Olmstead St	University St	Bowdoin St	C,P	Fay Impr.Co.	3-9-51	9-19-51	(4,115.26 2,093.62) -
Burnham St	25th St	(Crossing)	S,C,P	Fay Impr.Co.	3-2-51	10-19-51	(3,578.53 988.48) -
*Hamilton St	Woolsey St	Dwight St	C,P	Fay Impr.Co.	3-2-51	6-18-52	(4,865.45 2,000.00) -
*Bowdoin St	Olmstead St	Mansell St	C,P	Fay Impr.Co.	3-2-51	10-18-51	(5,001.31 3,001.31) -
*Burnham St	25th St	Clipper St	C,P	Fay Impr.Co.	3-23-51	10-19-51	(2,169.42 987.60) -
Dwight St	Bowdoin St	Hamilton St	S,C,P	Fay Impr.Co.	3-23-51	11-16-51	(8,039.22 2,101.45) -
Campbell St	Brussels St	Goettingen St	S,C,P	Bernal Constr. Co.	4-11-51	4-23-52	(9,614.30 3,242.20) -
Goettingen St	Mansell St	310' S	C,P	Fay Impr.Co.	8-15-51	75%	(5,625.10 1,900.00) -

CURRENT CONTRACT DATA 1951-1952

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings (Cont'd)							
Shafter Ave	Industrial St	145' S	S,C,P	Fay Impr.Co.	7-3-51	11-16-51	\$ 3,741.70
Darhmouth St	Olmstead St	Mansell St	C,P	Fay Impr.Co.	7-6-51	55%	4,376.94 (1,950.00)-
Goettingen St	Mansell St	Crossing	S,C,P	Fay Impr.Co.	8-15-51	75%	5,625.10 (1,900.00)-
Sargent St	Bright St	Vernon St	S,C,P	Eaton & Smith	12-12-51	75%	34,987.50 (10,000.00)-
Dwight St.	Darhmouth	Crossing	S,C,P	Fay Impr.Co.	8-15-51	60%	4,413.78 (2,000.00)-
Darhmouth St	Woolsey St	Dwight St	C,P	Fay Impr.Co.	8-8-51	55%	4,875.00 (1,900.00)-
Darhmouth St	Dwight St	Olmstead St	C,P	Fay Impr.Co.	8-15-51	45%	5,123.20 (4,700.00)-
Ordway St	San Bruno Ave	Girard St	S,C,P	E.J. Treacy	9-7-51	99%	5,751.50 (2,600.00)-
Campbell Ave	Delta, Ervine, Alberta	Intersections	S,C,P	Bernal Constr.	9-12-51	60%	6,411.00 (1,100.00)-
Los Palmos Dr.	Foerster, Verna Sts	Intersections	S,C,W,P	Fay Impr.Co.	9-19-51	10%	4,557.50 (600.00)-
Montcalm St	York St	Crossing	S,C,P,W	E.J. Treacy	9-28-51	5-28-52	2,605.00 (1,500.00)-

CURRENT CONTRACT DATA 1951-1952

APPENDIX I

I-12

Street or Subdivision	From	To	Impts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings (Cont'd)							
Poplar St	25th St	S-Exist. Pavement	C, P	E. J. Treacy	10-10-51	3-28-52	\$ 1,683.48 (295.99) -
Los Palmos Dr	Foerster St	Teresita Blvd	C, S, P	Fay Impr. Co.	10-3-51	10%	11,318.50 6,880.50) -
Mercury St	Thornton Ave	S'yly Termina- tion	S, C, P	Chas. L. Harney	10-31-51	4-30-52	6,243.00 (5,600.00) -
Anzavista Ave	Anzavista Ave	Other Loca- tions	S	Balliet Bros	1-11-52	4-16-52	3,150.00
11th Ave	Ortega St	Other Locations	S	Balliet Bros	1-11-52	2-12-52	3,150.00
Campbell Ave	Elliot St	Delta St	C, P	Bernal Constr. Co.	1-23-52	45%	5,999.50 (3,300.00) -
Carroll Ave	Ingalls	Crossing	S, C, P	Eaton & Smith	1-16-52	4-29-52	3,835.00
Peralta Ave	Esmeralda Ave	Mayflower St	C, P	Sibley Grading	2-6-52	0	980.00
Peralta Ave	Mayflower St	Powhattan Ave	C, P	Fay Impr. Co.	3-26-52	40%	3,409.14 (800.00) -
Florentine Ave	Brunswick St	N'yly Exist Pavement	S, C, P	Eaton & Smith	4-9-52	75%	4,974.00 (1,800.00) -
*Burnham St	24th St	25th St	S, C, P	Fay Impr. Co.	4-11-52	15%	5,247.60 (3,200.00) -
*Mangels Ave	Detroit St	Congo St	C, P	Fay Impr. Co.	4-25-52	0	6,998.50 (4,300.00) -
24th St	Burnham St	Fountain St	C, P	Fay Impr. Co.	4-30-52	15%	1,798.16 (1,000.00) -

CURRENT CONTRACT DATA 1951-1952

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings (Cont'd)							
Ralston St Worcester St	Randolph St Ralston St	Worcester St Vernon St	S,C,P	Fay Impr.Co.	5-28-52	0	\$12,722.80 (9,500.00)-
Total Awarded during Fiscal Year							\$159,603.00
Total Value of Work Done During Fiscal Year							131,673.31

* Remaining Portions of Street Under Private Contract

(-) Estimated Amount of City obligation. Balance through assessment on property benefited.
City funds from Special Road Improvement Fund.

S = Sewers C = Curbs P = Paving W = Sidewalk

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
B-3 STREETS - Public Contract City Pay					
Dalewood Way (N½) betw. San Miguel Rancho Line & W. Term. (Curbs- Paving-Sewers) The Fay Improvement Co.	11-29-50	6-28-51	\$ 5,233.80	\$ 5,233.80	Spec. Rd. Impr.
24th St.-Fountain St. and Hoffman Ave. (Paving) The Fay Improvement Co.	12-8-50	7-30-51	4,502.77	4,502.77	Spec. Rd. Impr.
*Carver St. (W½) betw. Mayflower St. & Bernal Heights Blvd. (Curbs-Paving) Eaton & Smith	3-16-51	10-4-51	1,191.25	1,191.25	Spec. Rd. Impr.
Parker Ave. betw. Anza St. & Turk St. (Reconstruction) Eaton & Smith	5-25-51	10-24-51	25,053.00	25,053.00	Spec. Rd. Impr.
Byxbee Playground (Construction Sidewalks) Arras Bros.	6-8-51	7-11-51	1,679.05	1,679.05	Spec. Rd. Impr.
Ocean Ave. betw. Sunset Blvd. & Gellert Drive (Improvement) Pacific Pavement Co. Ltd.	8-24-51	12-17-51	6,405.65	6,405.65	Spec. Rd. Impr.
Teresita Blvd. betw. Portola Drive & Foerster St. (Resurfacing) The Lowrie Paving Co.	9-21-51	11-5-51	16,849.16	16,849.16	Spec. Rd. Impr.

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended	1951-52	Fund
B-3 STREETS - Public Contract City Pay (Cont'd)						
Broadway betw. Fillmore St. & Steiner St., Steiner St. betw. Broadway & Vallejo St. (Reconstruction) Chas. L. Harney, Inc.	11-14-51	2-7-52	\$15,627.60	\$15,627.60		Major Str. Spec.Rd.
Bush St. & Pine St. betw. Larkin & Hyde St. (Reconstruction) Eaton & Smith	4-18-52	6-18-52	8,964.30	8,964.30		Major Str. Spec.Rd. Impr.
Eucalyptus Drive betw. 19th & 20th Aves. (Widening) The Fay Improvement Co.	5-14-52	30%	4,146.75	1,095.00		Spec.Rd. Impr.
Spruce St. betw. Washington St. & Presidio Wall (Reconstruction) The Fay Improvement Co.	5-16-52	6-12-52	3,971.41	3,971.41		Spec.Rd. Impr.
Sanchez St. betw. 18th St. & 19th St. (Reconstruction) Chas. L. Harney, Inc.	6-4-52	0%	13,785.00	0		Spec.Rd. Impr.
Jerrold Ave. betw. Quint St. & Phelps St. (Curbs & Pavement) The Lowrie Paving Co. Inc	6-4-52	0%	12,097.00	0		Spec.Rd. Impr.
Totals Awarded and Expended During Fiscal Year			\$81,846.87	\$90,572.99		

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended	1951-52	Fund
B-4 STREETS - Car Track Removal						
Oak St. betw. Fillmore & Stanyan						
Page St. betw. Fillmore & Stanyan						
Stanyan St. betw. Oak & Carl						
Frederick St. betw. Stanyan & Arguello						
Broderick St. betw. Oak & Fell (Removal of Tracks and Recon- struction of Pavement)						Spec. Rd. Impr. 1947 Str. Impr. Bond
Piombo Construction Co.	12-13-50	8-14-52	\$306,028.85	\$108,658.85		
Mission St. from Excelsior Ave to County Line (Removal of Tracks and Recon- struction of Pavement)						1947 Str. Impr. Bond 1947 Muni Fund Spec. Rd. Impr.
The Lowrie Paving Co.	3-30-51	9-1-51	246,961.48	198,086.48		
Divisadero St. from Page to Geary						
Divisadero St. from Sutter to Sacramento St.						
Sacramento St. from Fillmore to Arguello Blvd.						
(Removal of Tracks and Recon- struction of Pavement)						1947 St. Impr. Bond Major Street
Eaton & Smith	4-27-51	8-28-51	248,786.70	172,796.70		
O'Farrell St. betw. Hyde & Divisadero Sts.						
Larkin St. betw. Market & Post						
Post St. betw. Larkin & Polk						
Hyde St. betw. O'Farrell & Ellis						
(Removal of Tracks and Recon- struction of Pavement)						Major Street 1947 St. Impr. Bd. Spec. Rd. Impr. General
Fay Improvement Co.	8-3-51	4-11-52	228,477.88	228,477.88		

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
B-4 STREETS - Car Track Removal (Cont'd)					
Second St. betw. Market & Brannan Brannan St. betw. Second & Third (Removal of Tracks & Reconstruction of Pavement) Chas. L. Harney, Inc.	9-5-51	3-4-52	\$118,248.02	\$ 118,248.02	Major St. 1947 Str. Impr. Bond
Townsend St. betw. 3rd & 4th Sts. (Removal of Tracks & Reconstruction of Pavement) Chas. L. Harney, Inc.	11-14-51	2-15-52	25,260.59	25,260.59	1947 Str. Impr. Bond
Clement St. betw. 32nd & 33rd Aves. 33rd Ave. betw. Clement St. & Geary (Removal of Tracks & Reconstruction of Pavement) Lowrie Paving Co.	10-19-51	2-7-52	25,639.22	25,639.22	1947 Str. Impr. Bond
22nd St. betw. Mission & Chattanooga 24th St. betw. Dolores & Hoffman Ave Chattanooga St. betw. 22nd & 24th Sts. Dolores St. betw. 22nd & 24th Sts. (Removal of Tracks & Reconstruction of Pavement) Chas. L. Harney, Inc.	11-30-51	92%	283,250.00	222,020.00	Spec. Rd. Impr. 1947 Str. Impr. Bond
Turk St.-Market to Divisadero Eddy St.-Market to Divisadero Mason St.-Turk to Eddy (Removal of Tracks & Reconstruction of Pavement) Piombo Construction Co.	6-25-52	0%	458,428.90	0	Major Street 1947 St. Impr. Bd. Spec. Rd. Impr.
Total Awarded and Expended During Fiscal Year			\$1,139,304.61	\$1,099,187.74	

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
C-TRAFFIC SIGNALS & CHANNELIZATION					
Traffic Signals at Isolated Crossings (7th Contract) (Installation of Traffic Signals) Abbett Electric Company	12-20-50	6-19-51 \$	38,287.80	\$ 11,137.80	Spec.Rd. Impr.
Market St. at Battery St. & Sansome St. (Traffic Signals and Channelization) The Lowrie Paving Co.	3-7-51	8-22-51	31,037.78	13,037.78	Spec.Rd. Impr.
Traffic Signals at Isolated Crossings (8th Contract) (Installation of Traffic Signals) R. Flatland	4-25-51	7-30-51	26,836.50	13,111.50	Major St.
Mission & Otis Sts.-betw.S.Van Ness & Duboce (Traffic Signals & Channelization) Savern Electric Co.	5-23-51	12-5-51	21,514.29	21,514.29	1947 Str. Imp.Bd.
3rd St. at Berry & Channel (Traffic Signals & Channelization) Abbett Electric Co.	7-6-51	3-18-52	34,787.35	34,787.35	Major Str. Spec.Rd.
Bayshore Blvd.betw.3rd St. & County Line (Traffic Signals & Channelization) R. Flatland	8-10-51	2-12-52	41,254.56	41,254.56	State Hwy. Major St.

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
C-TRAFFIC SIGNALS & CHANNELIZATION (Cont'd)					
Mission & Army Sts. and 19th & Holloway Avenues (Additional Traffic Signals Installation) R. Flatland	8-24-51	10-26-51	\$ 1,297.00	\$ 1,297.00	Spec. Road
Alemanly Blvd.-betw. Silver Ave & San Jose Ave. (Pedestrian Signals) R. Flatland	10-11-51	12-13-51	5,855.00	5,855.00	State Hwy. Major St.
Folsom & Essex Sts. (Furnishing & Installing Floodlight) Smith Electric Co.	2-27-52	4-1-52	123.00	123.00	Spec. Road
Traffic Signals at Isolated Crossings (9th Contract) (Installation) Ets-Hokin & Galvin	4-18-52	7%	87,210.61	4,240.00	Major St. Spec. Rd.
Bayshore Blvd. betw. Augusta St. & 3rd St. (Traffic Signals & Channeli- zation) R. Flatland	5-9-52	0%	23,595.00	0	Major St.
3rd St. at Berry & Channel (Modification of Traffic Signal System) H.S. Tittle Co.	5-21-52	95%	1,712.00	0	Spec. Rd.
Total Awarded and Expended during Fiscal Year			\$ 195,834.52	\$ 146,358.28	

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
D-1 SEWERS - PIPE - Vitrified & Concrete					
Lake St. Sewer System Section "C", Contract 2, (Construction Con- crete Pipe Sewer) Chas. L. Harnay, Inc.	8-11-50	8-8-51	\$ 115,113.33	\$ 19,063.33	1944 Sewer Bd.
24th St. betw. Fountain & Hoffman (Reconstruction of Sewer) Arthur Wallgren	2-28-51	6-27-51	6,241.50	6,241.50	General
17th Ave. from Geary Blvd. to Lake St. (Construction of Pipe Sewer) M. & K. Corporation	5-4-51	11-1-51	158,586.30	133,511.30	General
Marin St. betw. Illinois & Michigan St. (Sewer) M. J. Lynch	8-22-51	12-14-51	36,338.85	36,338.85	1948 Sewage Tr. Bd.
36th Ave. & Sunset Blvd.- Sloat Blvd. to Vicente St. (Construction of Sewer) M. J. Lynch	10-24-51	70%	115,472.00	60,000.00	1944 Sewer Bd.
Twin Peaks Blvd.-Intercepting Drain (Construction Drain) Flora Crane Service	12-12-51	1-29-52	3,639.82	3,639.82	General
Tunnel Ave. Sewer Extension - S.P. Bayshore Yard (Construction) Eaton & Smith	12-21-51	4-1-52	10,574.75	10,574.75	General
Lake St. Sewer System Section "C" (Contract 3) (Construction & Track Removal) McGuire & Hester	12-28-51	93%	188,824.00	149,090.00	1944 Sewer Bd.
Total Awarded and Expended During Fiscal Year			\$ 354,849.42	\$ 418,459.55	

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52 Fund	
D-2 - SEWERS - CONCRETE (Monolithic)					
Jackson St. betw. Drumm & Battery (Sewer Reconstruction & Track Removal) Chas. L. Harney, Inc.	4-12-50	7-31-51	\$145,826.39	\$ 40,146.39	1944 Sewer Bd.
Southeast Collecting Sewers Section A-1 (Influent Inter- cepting Sewer) Healy Tibbitts Construction Co.	4-13-51	2-25-52	256,434.70	248,784.70	1948 Sewage Tr. Bd.
Southeast Collecting Sewers Section A-2 (Effluent Inter- cepting, Miscellaneous Sewers) M. & K. Corporation	6-20-51	51%	473,315.00	205,275.00	1948 Sewage Tr. Bd.
Southeast Collecting Sewers - Section E-1 (Construction East Influent Intercepting Sewer) Duncanson-Harrelson	9-21-51	20%	183,700.00	31,195.00	1948 Sewage Tr. Bd.
Southeast Collecting Sewers B-1, B-2, B-3 (Construction Diversion Str. & Intercepting Sewer) Healy-Tibbitts Construction Co.	11-21-51	12%	269,450.00	28,050.00	1948 Sewage Tr. Bd.
Total Awarded and Expended During Fiscal Year			\$453,150.00	\$553,451.09	

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
E-1 - SEWAGE TREATMENT PLANTS					
North Point Sewage Treatment Plant-Bay St. at Grant Ave. (Construction)					
Joint Venturers (M & K Corporation (Fred J. Early Jr. Co. (Stolte, Inc. (Haas & Rothschild	11-28-48	12-17-51	\$8,725,489.81	\$1,711,714.81	1944 Sewer Bd.
North Point Sludge Treatment Plant-near Islais Creek (Construction)					
Joint Venturers (MacDonald Young & Nelson (Morrison Knudsen Co.	8-26-49	10-16-51	4,736,832.07	792,897.07	1948 Sewage Tr. Bd.
North Point Sewage Treatment Plant-Influent & Effluent Sewers (Construction) Chas. L. Harney, Inc.	10-26-49	11-5-51	1,154,889.97	201,614.97	1948 Sewage Tr. Bd.
Southeast Sewage Treatment Plant-near Islais Creek (Construction)					
Joint Venturers (Walsh Construction Co. (Bates & Rogers Const. Corp. (J. H. Pomeroy	1-18-50	11-16-51	2,120,457.58	344,682.58	1948 Sewage Tr. Bd.
Total Awarded and Expended During Fiscal Year			0.00	3,050,909.43	

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
E-2 MISCELLANEOUS					
Broadway Tunnel & Approaches - betw. Polk & Powell Sts. (Con- struction of tunnel) Morrison Knudsen Co. Inc.	2-8-50	85%	\$5,253,552.00	\$2,573,545.00	1947 St. Impr. Bd.
Maintenance Yard at 2323 Army St. (General Construction) Biltwell Construction Co.	3-3-50	12-14-51	435,700.13	138,625.13	General
Maintenance Yard at 2323 Army St. Plumbing & Mechanical Work Jack Rosen	3-3-50	12-7-51	64,292.77	24,087.77	General
Maintenance Yard at 2323 Army St. (Electrical Work) Enterprise Electric Works	3-3-50	12-3-51	43,722.05	27,147.05	General
Log Cabin Sewage Treatment Plant (Construction) M. J. Lynch	6-23-50	4-14-51	41,578.10	12,328.10	General
Mission St. Viaduct Over Alemany Blvd. (Construction of Viaduct) Granite Construction Co.	7-12-50	12-7-51	355,677.85	169,782.85	Pub. Utilities State Hwy.
Phelan Beach Recreation Area (Improvement of Area) Chas. L. Harney, Inc.	9-8-50	8-22-51	171,503.46	61,423.46	1947 Rec. Bd.

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
E-2 MISCELLANEOUS (Cont'd)					
Stanley Drive Underpass Including Channelization of Junipero Serra Blvd. (Construction)					State Hwy. Major St. 1927 Boul. Bond
Joint (M & K Corporation Venture (Eaton & Smith	11-3-50	99%	\$ 445,881.10	\$ 297,160.00	
Farmers Market(1st Contract) (Construction) Eaton & Smith	1-17-51	7-12-51	114,594.57	31,074.57	General
Street Signs (New Type)Contract #7 (Installation) Bernal Construction Co.	2-2-51	1-3-52	18,223.15	18,223.15	Spec.Road Imp.
Southeast Collecting Sewers - Tunnels & Sewers(Test Borings) J.N.Pitcher Co.	4-13-51	9-30-51	9,547.88	9,547.88	1948 Sewage Tr. Bd.
Southeast Collecting Sewer in Islais Creek Channel - Marine Test Borings J.N.Pitcher Co.	6-13-51	8-23-51	1,759.40	1,769.40	1948 Sewage Tr. Bd.
Southeast Collecting Sewers Section F-2, Hunters Point Tunnel (Test Borings) J.N.Pitcher Co.	7-11-51	11-2-51	5,585.00	5,585.00	1948 Sewage Tr. Bd.

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
E-2 MISCELLANEOUS (Cont'd)					
Apparel City, A.W.S.S. (Extension to Auxiliary Water Supply System) Walter Lenkeit	7-27-51	3-14-52	\$ 68,573.53	\$ 68,573.53	General
Junipero Serra at Alemany (Razing Gasoline Station) Lucey Concrete Cutting Co.	9-14-51	3-27-52	300.00	300.00	State Highway
Bryant St. Viaduct betw. 2nd St. & Beale St. (Construction of a Viaduct) Chas. L. Harney, Inc.	9-21-51	15%	274,596.00	35,615.00	Major St. Spec. Rd.
Maintenance Yard-Public Works at 11th St. (Razing of Build- ings) Cut Rate Wrecking Co.	9-26-51	3-26-52	351.00	351.00	Spec. Rd. Impr.
Farmers Market (2nd Contract) Administration Bldg. (Construc- tion of) Hart & Hynding, Inc.	11-16-51	99%	23,085.00	17,700.00	General
Parking Meter Posts #12 & #16 (Installation & Removal) Arthur Wallgren	12-14-51	2-13-52	1,898.00	1,898.00	General
Log Cabin Ranch in San Mateo County (Resurfacing Access Road) L.C. Smith Co.	12-26-51	90%	8,282.00	6,970.00	General

CURRENT CONTRACT DATA 1951-1952

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund
E-2 MISCELLANEOUS (Cont'd)					
Lakeshore Park Pumping Station (Construction of Mono-Rail) Acme Welding Co.	1-2-52	2-18-52	\$ 364.80	\$ 364.80	General
Silver Ave. betw. Oxford & Gambier Sts. (Construction of a Guard Rail) Wellnitz & De Narde	1-11-52	4-25-52	2,965.00	2,965.00	Major Street
Farmers Market - 3rd Contract (Construction of Timber Sales Sheds) Bergquist Construction Co.	1-9-52	4-17-52	6,864.92	6,864.92	General
Union & Calhoun St. (Construction of a Timber Grib Wall & Slope Repairs) Wm. McIntosh & Son	1-18-52	5-2-52	2,876.62	2,876.62	Spec. Rd. Impr.
Filbert St. Extension A.W.S.S. (Installation Auxiliary Water Supply System) B. Miles Thomas Co.	2-27-52	5-16-52	10,451.92	10,451.92	General
Farmers Market- 4th Contract (Planting of a Windbreak) Dana R. Tyson Co.	3-7-52	5-2-52	1,582.40	1,582.40	General
Golden Gate Ave.-Gough St. - Franklin St. (Sandblasting Center Traffic Stripes) J.H. Mohr	3-14-52	4-21-52	1,167.61	1,167.61	Spec. Rd.

CURRENT CONTRACT DATA 1951-1952						
Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1951-52	Fund	
E-2 MISCELLANEOUS (Cont'd)						
Lakeview & Plymouth Ave. (Razing of Building) John J. Lucey	4-16-52	6-9-52	\$ 425.00	\$ 425.00	General	
E1 Camino Del Mar & 36th Ave. (Installation of Electric Air Raid Siren) Ets-Hokin & Galvan	4-30-52	95%	636.00	0.00	General	
Municipal Asphalt Plant Parking Shed(Relocation Employees Facilities) Robert Cole Smith	5-2-52	6-30-52	4,203.00	4,203.00	General	
South Sunset Playground (Construction of Sidewalks) Ceccotti & Son	5-16-52	0%	2,455.00	0	Spec.Rd. Impr.	
Islais Creek Bridge(Repairs West Girder North Leaf) Judson Pacific Murphy Corp.	5-21-52	99%	960.00	0	Spec.Rd. Impr.	
Log Cabin Ranch- (Widening Portion Road) Bernal Construction Co.	5-21-52	50%	1,735.00	0	General	
Southeast Sewage Treatment Plant (Construction of Bumping Posts for Spur Track) M.J.Lynch	6-25-52	0%	2,028.00	0	1948 Sewage Tr. Bd.	
Farmers Market-5th Contract (Construction of Parking Area Pavement, Etc.) The Lowrie Paving Co.Inc.	6-27-52	0%	14,616.80	0	General	
Total Awarded and Expended During Fiscal Year			\$ 436,002.60	\$3,532,608.16		

BUREAU OF ARCHITECTURE

REPORT OF ACTIVITIES

Showing all work completed, contracts under construction
and work in progress, and work under preparation
July 1, 1951 to June 30, 1952.

WORK COMPLETED

Board of Education

New School Building Construction	
Ulloa Elementary School	\$ 910,606.00
John O'Connell Trade School	1,600,839.68
Fremont Elementary School	845,494.02
Hillcrest Elementary Units 2 & 3	255,140.00
Test Borings & Soil Analyses	
Sunnydale Elementary School	1,175.00
Lakeside Elementary School	1,310.00
Mark Twain Elementary School	700.00
Sunset Junior High School	1,126.00
Bret Harte Elementary School	300.00
Twin Peaks Elementary School	1,290.00
Funston & Santiago Junior High	1,720.00
Funston & Santiago Junior High	466.45
Ridgepoint No. 3 Elementary	1,476.50
Burnett Elementary School	1,861.50
Lake Merced Elementary	1,575.00
Douglas Elementary School	1,295.00
Geary Elementary School	1,220.00
San Miguel Elementary School	1,400.00
Commodore Stockton Elementary	2,000.00
Delta & Wilde Home School Unit	1,890.00
Jedediah Smith Elementary School	1,920.00
Girls' High School Addition	1,625.00
City College Addition	1,658.00
Miscellaneous Alterations	
Aptos Junior High School	
(New Concrete Stairway)	3,987.00
Daniel Webster Elementary School	
(Fire Repairs)	49,933.00
Frank McCoppin & Sutro Elementary	
(New Concrete Fire Escapes)	24,203.00
Mission High School	
(Install Acoustical Tile)	3,772.00
Grant, Parkside, Taylor, W. Irving,	
Emerson, McKinley	
(Conversion of Heating Plants)	55,941.00
Alvarado, Francisco, Mission	
(Install steel sash)	12,186.00
Aptos Junior High School	
(Roofing)	5,151.00
John O'Connell Trade School	
(Intercept yard drains)	1,500.00

Miscellaneous Alterations(Continued)

Hillcrest Elementary School (Moving Eight Portable Classrooms)	\$ 27,069.00
Mission High School Replace hot water tanks)	10,990.00
Eucalyptus Home School Unit (Laykold pavement)	2,000.00

Repave Yards at following Schools

Alvarado Elementary School	25,369.00
Aptos Junior High School	8,689.00
Farragut Elementary School	5,368.00
Monroe Elementary School	2,732.00
Francis Scott Key Elementary	9,900.00
Madison Elementary School	1,855.00
Winfield Scott Elementary School	10,754.00
Sunnyside Elementary School	10,600.00
Everett Junior High School	26,533.00
Sanchez Elementary School	18,563.00
John Muir Elementary School	5,069.00
James Lick Junior High School	21,840.00
Kate Kennedy Elementary School	7,173.00
Edward R. Taylor Elementary School	13,757.00
Fairmount Elementary School	13,355.50
West Portal Elementary School	25,500.00
Garfield Elementary School	12,567.00
Portola Junior High School	51,028.00

Resilient Flooring at the following Schools

Kate Kennedy Elementary School	10,256.00
Bryant Elementary School	10,628.00
Washington Irving Elementary School	9,586.00
Jean Parker Elementary School	12,785.00
Columbus Elementary School	11,672.00
Parkside Elementary School	16,497.00
Redding Elementary School	13,472.00
Grant Elementary School	9,686.00
Laguna Honda Elementary School	12,967.00
Spring Valley Elementary School	15,513.00
Cleveland and Longfellow Elementary Schools	20,466.00
Madison and Argonne Elementary Schools	16,861.00
Hancock and Garfield Elementary Schools	22,686.00
Marshall and Alta Vista Elementary Schools	23,332.00
F. McCoppin and Grattan Elementary Schools	22,371.00

Interior Painting at the following Schools

Mission High School	57,532.00
John Muir Elementary School	12,908.00
Guadalupe Elementary School	11,032.00
Hawthorne Elementary School	13,245.00
Spring Valley Elementary School	10,465.00
Glen Park Elementary School	11,733.00
Grattan Elementary School	10,858.00
Columbus Elementary School	9,600.00
Aptos Junior High School	29,054.00

Total Board of Education Work Completed . . . \$4,500,677.65

Department of Public Health

San Francisco Hospital	
Modernize One Hydraulic Elevator	\$ 4,425.00
Surgical Suite Remodeling of	
Sink & Countertop Assemblies	1,169.20
Pharmacy Flooring	1,991.00
Surgical Suite Remodeling Part I	61,442.00
Corridors & Butcher Shop Painting	954.00
New Pharmacy Lighting Fixtures	280.00
Kitchen & Dining Room Painting	2,160.00
Pharmacy Painting	623.00
Laguna Honda Home	
Fire Doors	6,344.00
Auditorium Fire-Proof Curtains	1,192.96
Health Center Building	
Flag Pole Repairs	25.00
Total Public Health Work Completed	\$ 80,606.16

Museums

M. H. deYoung Memorial Museum	
Roof Repairs	\$ 5,009.40
Legion of Honor	
New Concrete Vent Duct Housings	2,516.00
Achenbach Wood Cabinets	6,700.00
Total Museum Work Completed	\$ 14,225.40

Fire Department

New Construction	
Fire Engine No. 30	\$ 205,757.57
Alterations	
City Hall Fire Department	
Office Alterations	7,170.24
Engine No. 46 Exterior Repairs	9,995.00
Total Fire Department Work Completed	\$ 222,922.81

Juvenile Court

Youth Guidance Center	
General Construction Phase III	\$ 720,728.38
Landscape Work Phases I, II, & III	8,397.00
Paper Holder Installation	1,397.00
Safety Detention Screens	9,244.00
Mechanical & Electrical Supplementary	
Items	12,156.00

Youth Guidance Center(Continued)

General Construction Supplementary Items	\$	8,657.93
Fence Reinforcing		5,480.00
Additional Landscape Work		5,357.00
Miscellaneous Iron Work		5,306.71
Total Juvenile Court Work Completed	\$	776,724.02

Public Library

Alterations

Main Library		
Repair Flag Poles	\$	105.00
Parkside Branch Library		
New Fire Screens		218.00
Parkside Branch Library		
Additional Millwork		1,232.00
Total Public Library Work Completed	\$	1,555.00

Civic Center

City Hall

Controller's Payroll Division		
Alterations	\$	2,566.00
General Flagpole Repairs		115.00

Civic Auditorium

Roof Repairs		9,451.00
Interior Tile & Terrazzo Work		59,941.00
General Repairs to Flagpoles		814.00
Basement Plumbing Work		3,865.00

Total Civic Center Work Completed	\$	76,752.00
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Miscellaneous

Bureau of Supplies		
Central Warehouse Roof Repairs	\$	3,989.00
Registrar of Voters		
Roof Repairs		3,365.00
S.F. County Jail		
Mens' Bldg. Roof Repairs		10,439.00
Demolition of Auto Shop No. 1		8,727.74
Lake Merced Pumping Station		
Designing Only		
North Point Sewage Treatment Plant		
Designing Only		
Total Miscellaneous Work Completed	\$	26,520.74

TOTAL ALL WORK COMPLETED	\$	5,699,983.78
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CONTRACTS UNDER CONSTRUCTION

Board of Education

Percent
Completed

New School Building Construction

Washington High School Addition	\$ 217,033.00	98
Silver Avenue Grading	36,750.00	90
Miraloma Elementary School	989,342.00	75
Abraham Lincoln High School Addn.	3,640,712.00	63
Patrick Henry Elementary School	728,154.00	17
Sunset "A" Elementary School	1,282,891.00	55
Ocean View Heights Home School	358,063.00	30
Bret Harte Elementary School	1,223,359.00	34
Sunnydale Elementary School	1,170,276.00	3
Lakeside Elementary School	784,110.00	1
Delta & Wilde Home School	299,800.00	15
Twin Peaks Elementary School	439,444.00	1
City College Library & Classroom Bldg.	2,326,800.00	1
Sunset Community Center Grading	149,755.00	0
Douglas Elementary School	486,121.00	0
Girls' High School Addition	782,434.00	0

Test Borings & Soil Analyses

Sunset Community Center Site	1,900.00	0
Sunnydale Elementary School Site	1,800.00	75
Bret Harte Elementary School Site	291.50	75
Silver Avenue Elementary School Site	618.50	20
Silver Avenue Elementary School Site	270.00	0

Miscellaneous Alterations

Pacific Heights, Galileo, Jackson (Cast stone & Window Work)	31,365.00	10
Francisco Junior High School (Alter Girls Showers)	11,989.00	25
Jefferson Elementary School (Acoustical Work)	34,687.00	50
Jefferson Elementary School (Electrical Work)	14,425.00	65
Bayview Elementary School (Minor Alterations)	3,678.00	1
Marshall Elementary School (Exterior Eaves)	31,777.00	15
Madison Elementary School (Roofing & Windows)	27,912.00	1
Frank McCoppin Elementary School (Roofing & Windows)	26,978.00	15
Sutro Elementary School (Windows)	24,531.00	5
Sheridan Elementary School (Roofing)	13,331.00	1
Lowell High School (Girls Gym Acoustical Work)	3,120.00	0
Ulloa Elementary School (Della Robbia Panels)	985.00	50
Sheridan Elementary School (Fire Escape)	7,332.00	10

		Percent Completed
Miscellaneous Alterations(Continued)		
City College (Paint Technology Lab.)	\$ 5,450.00	50
George Washington (Roofing)	20,622.00	10
John Swett School (Remodeling)	184,500.00	0
Emerson Elementary School (Remodeling)	20,222.00	0
Lincoln Elementary School (Remodeling)	26,823.00	0
Ridgepoint #1 & #2, Guadalupe, Doublorock Elementary Schools (Moving Prefab Classrooms)	25,885.00	0
Portola Elementary School (New Boiler)	26,657.00	5
Peabody, Grattan, R. Weil, Education Warehouse, Yerba Buena, Francisco, C. Stockton Annex, Spring Valley Elementary Schools (Conversion of Boilers)	71,316.00	0
San Miguel Elementary School (Moving Prefab Classrooms)	20,618.00	25
Repave Yards at following Schools:		
Marina Junior High School	50,079.99	50
Junipero Serra Elementary School	4,405.00	25
Commodore Sloat Elementary School	20,586.00	50
Longfellow Elementary School	10,974.00	25
George Washington High School	35,300.08	30
Guadalupe Elementary School	12,114.00	65
Mission High School	16,277.00	45
Washington Irving Elementary School	10,840.00	10
Grattan Elementary School	4,385.00	30
Jackson Elementary School	8,893.00	45
Roosevelt Junior High School	3,950.00	85
Presidio Junior High School	22,519.00	0
Yerba Buena Elementary School	8,830.00	0
Francis Scott Key Annex	5,749.00	75
Resilient Flooring at following Schools:		
Fairmount & Commodore Sloat Elementary Schools	23,802.00	90
Sheridan Elementary School	9,213.00	90
Junipero Serra Elementary Part 1	10,232.00	65
Gough, Cabrillo and Andrew Jackson Elementary Schools	19,390.00	95
Guadalupe & Bayview Elementary Schools	20,197.00	80
Portola Junior High & Taylor Elementary	12,903.00	75
Jefferson Elementary	11,532.00	10
Pacific Heights Elementary	12,473.00	50
Yerba Buena Elementary School	8,852.00	50
Francisco Junior High School	11,474.00	10
Emerson Elementary	9,257.00	50

		Percent Completed
Resilient Flooring at following Schools (Continued)		
Monroe Elementary School	\$ 12,733.00	50
Paul Revere Elementary School	4,473.00	10
Farragut Elementary School	9,967.00	10
Interior Painting at following Schools		
Balboa High School	37,200.00	25
Columbus Elementary School	10,813.00	60
Grattan Elementary School	12,627.00	45
Sunnyside Elementary School	6,488.00	45
Spring Valley Elementary	11,987.00	50
Presidio Junior High School	26,259.00	15
Lowell High School	36,860.00	45
Horace Mann Junior High School	21,123.00	60
Total Amount of Contracts under construc- tion for the Board of Education	\$16,108,892.07	

Department of Public Health

San Francisco Hospital		
Replace elevator equipment		
T.B. Wing Isolation Bldg.	\$ 30,099.60	90
Maternity Fifth Floor		
Alterations	15,169.00	10
Pharmacy & Laundry		
Elevator Alterations	1,350.00	0
Service Building		
New 620 H.P. Boiler	61,000.00	99
Fire Escapes	8,349.00	0
Laguna Honda Home		
Coffee & Tea Urn Area Remodeling	7,137.00	0
Alterations to Building "C"	3,489.00	0
Remodel Dishwashing Area	8,886.00	95
Total Public Health Work under construction	\$ 135,479.60	

Museums

M. H. deYoung Memorial Museum		
Spanish Room Ceiling	\$ 1,190.00	80
New skylights and roof repairs	3,311.00	0
Remodeling Gallery & Installation of Antique Rooms	51,445.17	95
Legion of Honor		
Repairing Cast Cement	4,594.00	0
Total Museum work under construction	\$ 60,540.17	

Fire Department

		Percent Completed
New Construction		
Park Merced Fire House	\$194,711.00	1
Alterations		
Engine No. 32 Repairs	15,424.00	0
19th & Folsom Street Firehouse Foundation & Soil Investigation	2,798.75	0
Total Fire Department work under construction	\$212,933.75	

Civic Center

Civic Auditorium		
Interior Painting of Corridors & Stairways	\$ 7,627.56	99
Terrazzo Floors	1,231.00	0
Total Civic Center work under construction	\$ 8,858.56	
TOTAL ALL WORK UNDER CONSTRUCTION	\$16,526,704.15	

WORK UNDER PREPARATION

Board of Education

New School Buildings

Plans & Specifications Completed

Silver Avenue Elementary (W. D. Peugh)	\$ 846,000.00
Commodore Stockton Elementary (Angus McSweeney)	675,000.00

Working Drawing Stage

Burnett Elementary School (Meyer & Evers)	831,300.00
Ridgepoint No. 3 Elementary (Kent & Hass)	1,000,000.00
Sunset Junior High School (Thomsen & Wilson)	3,251,100.00
Funston & Santiago Junior High (Ernest J. Kump)	3,008,600.00
Lake Merced Elementary School (John L. Reid)	1,041,900.00
San Miguel Elementary School (Mario J. Ciampi)	671,200.00

Preliminary Drawing Stage

Mark Twain Elementary School (Stone & Mulloy)	956,950.00
Southeast Junior High School (Gardner A. Dailey)	1,987,712.00
Candlestick Cove Elementary (Wurster, Bernardi & Emmons)	993,856.00
Starr King Elementary School (Blanchard & Maher)	700,000.00

Miscellaneous Alterations

Mission High School (Boys Gym Roof)	15,000.00
McKinley Elementary School (Windows)	25,000.00
Balboa, Mission & Portola (Cafeteria Remodeling)	65,000.00
Guadalupe Elementary School (New Cafeteria)	87,878.00
Horace Mann Junior High School (Resilient Flooring)	20,000.00
Junipero Serra Elementary School (Resilient Flooring Part 2)	6,500.00
Washington High School (Steel Windows)	8,500.00
City College (Air Conditioning & Refrigeration Lab)	65,000.00
Samuel Gompers Trade School (Conversion to Junior High)	100,000.00

Total Amount of Work Under Preparation for
Board of Education

\$ 16,356,496.00

Department of Public Health

San Francisco Hospital		
Surgical Suite Remodeling Part II	\$	80,000.00
Sealing new conductive floors in the Surgical Suite		170.00
Remodel Elevators		40,000.00
Repair Gutters and Downspouts in Ward Building		15,000.00

Laguna Honda Home		
Alterations to Administrative Offices		8,250.00
Replace Plumbing and Steam Lines		45,000.00

New Construction		
Sunset Community Health Center		100,000.00

Total Public Health Work Under Preparation	\$	288,420.00
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Museums

M. H. deYoung Memorial Museum		
Install Wood Paneling Oakes Anterooms No. 2 & 3	\$	4,800.00

Aquarium

Steinhart Aquarium		
Rewiring	\$	8,000.00

Fire Department

New Construction		
19th & Folsom Streets Fire House, Drill Tower & Training Center	\$	500,000.00
16th & Vermont Streets Fire House		161,000.00

Alterations		
Central Fire Alarm Station Repairs		10,900.00

Total Fire Department Work Under Preparation	\$	671,900.00
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Public Library

New Construction		
Marina Branch Library	\$	150,000.00

Miscellaneous

Traffic Courts at 150 Otis Street Building	\$	385,000.00
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TOTAL WORK UNDER PREPARATION	\$	17,864,616.00
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GRAND TOTAL OF WORK COMPLETED, UNDER CONSTRUCTION, & UNDER PREPARATION	\$	40,091,303.93
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RECAPITULATION

Work Completed

Board of Education	\$ 4,500,677.65
Public Health	80,606.16
Museums	14,225.40
Fire Department	222,922.81
Juvenile Court	776,724.02
Public Library	1,555.00
Civic Center	76,752.00
Miscellaneous	26,520.74

\$ 5,699,983.78

Contracts Under Construction

Board of Education	\$16,108,892.07
Public Health	135,479.60
Museums	60,540.17
Fire Department	212,933.75
Civic Center	8,858.56

\$16,526,704.15

Work Under Preparation

Board of Education	\$16,356,496.00	
Public Health	288,420.00	
Museums	4,800.00	
Aquarium	8,000.00	
Fire Department	671,900.00	
Public Library	150,000.00	
Miscellaneous	385,000.00	\$17,864.616.00

GRAND TOTAL \$40,091,303.93

APPENDIX III

SEWAGE PUMPING STATION CAPACITIES, ETC.

Name of Station & Location	Units	Type	Size of Pump Discharge Inches	Actual Total Head Ft.	Actual Capacity G.P.M. Each	Rated Horse Power	Rated Voltage	Rated Speed R.P.M.	Year Built	Approx. Cost	Sewage is Pumped into
Marina nr Casa Way	4	Horizontal	10	70	4350	100/60	440	870/695	1937	\$ 140,000	N.Pt. Outfall from Pierce
Park Merced	1	Single Stage	10	34	2600	30	440	870			
	2	2-Horizontal	6	131	1800	50	440	1170	1944	60,000	Eucalyptus Dr. Stanley St.
Lake Merced Blvd.		Pumps in Series	144	144	2500						Sewer from Stanley St. Diversion
Commercial St. nr Drumm St.	3	Vertical	6	20	2100	25	220	870	1905)	20,000	N.Pt. Main
	1	Single Stage							1908)	10,000	from District nr. Lower
Sea Cliff #2 nr Sea Cliff Drive	2	Horizontal	4	29	1050	15	Engine Driven	1600	1935)	3,550	Market St. Richmond-Sunset Sewer Tunnel at 25th Ave.
	1	Single Stage	4	100	650	25	220	1750	1940	57,500	& Lake St.
		Pumping unit 2-Horizontal									
Vicente at Gt. Highway	2	Vertical	5	140	1400	40	220	1150			Sunset Interceptor from Dist. nr Sloot Blvd. & Gt. Hwy.
	6	Single Stage	6	50	900	25	230	870	1928	4,500	
Fitzgerald nr Griffith St.	* 1	Vertical	4	47	350	15	220	1750		20,000	Bayview Main from Shore
Sea Cliff #1 nr Sea Cliff Dr.	1	Ditto	4	54	460	15	220	1165		2,660	Area
	* 2	Vertical	4	51	530	15	220	1150	1929	1,750	Sea Cliff Sta. #2 from China Beach Area
-Pine Lake nr Crestlake & Wawona Drs	* 1	Vertical	3	57	170	5	220	1750	1944	1,500	Sunset Interceptor from Pinelake Park
Hyde St. at Jefferson	2	Single Stage	4	29	310	5	220	860	1948	44,500	N.Pt. Outfall from Beach St. forcemain
Lakeshore Pk.-Lake Merced Blvd.	2	Vertical	5	96	1300	50	440	1150	1947	35,000	Eucalyptus Dr. excluding Sewer from Stanley St. Diversion
Canyon at Portola Dr.	* 2	Vertical	4	59	360	10	220	1755	1949	8,250	O'Shaughnessy Blvd.
Fulton St.	2	Single Stage	5	55	800	20	220	900	1950	90,000	46th Avenue at Fulton St.

-Temporary station. *Submerged pump. All pumps are centrifugal type, motor driven, unless otherwise noted.

TABLE 1
SEWAGE PUMPING STATION DATA

	Commercial St.	Fitzgerald St.	Fulton St.	Hyde St.		
Drainage Area, Acres	92.5	30	82	14		
Average Lift, feet	20	48	56	29		
Light & Auxiliary power % of total KWH	5%	Negl.	35%	45%		
Max. Pumping per day of yearly average	173					
KWH per million foot gallons pumped (A)	6.4	5.8	8	9.3		
Pumping efficiency (3.15/A)	48%	55%	40%	34%		
	Million Gallons Pumped	Power KWH	Million Gallons Pumped	Power KWH	Million Gallons Pumped	Power KWH
July 1951	23.75	3,480	4.10	980	1.12	204
August	26.95	3,930	2.95	860	.43	234
September	24.73	3,600	1.73	560	.67	251
October	27.36	4,020	2.96	660	.70	296
November	27.47	3,960	4.03	960	.67	253
December	29.51	4,350	1.91	660	1.01	303
January 1952	30.77	4,590	1.23	400	.42	178
February	24.91	3,750	6.00	1,620	.63	388
March	26.88	4,170	4.04	1,280	1.61	387
April	23.81	3,450	1.79	360	2.62	327
May	22.63	3,420	.19	80	1.46	442
June	23.33	3,330	1.41	580	2.71	538
Total	312.10	46,140	32.34	9,000	14.05	3,801

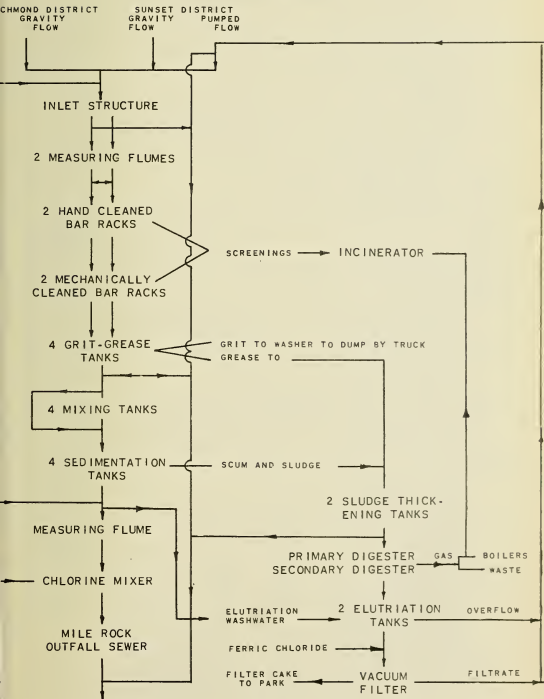
TABLE 2
SEWAGE PUMPING STATION DATA

	Lake Shore	La Place Canyon	Marina	Park Merced
Drainage Area, Acres	152			
Average Lift, feet	96	40	1,125	212
Light and Auxiliary power		59	38	123
% of total KWH	Negl.	Negl.	3%	7.6
Max. Pumping per day				
% of yearly average				
KWH per million foot			142	200
gallons pumped (A)	5.6	7.2	5.1	8.1
Pumping Efficiency (3.15/A)	57%	43%	62%	39%
	Million Gallons Pumped	Million Gallons Pumped	Million Gallons Pumped	Million Gallons Pumped
	Power KWH	Power KWH	Power KWH	Power KWH
July 1951	1.82	118.70	22,560	9.63
August	1.11	176.65	33,600	9.96
September	1.72	165.15	32,640	8.93
October	1.79	185.46	35,520	7.94
November	5.15	200.50	37,920	10.54
December	2.94	191.65	43,200	7.23
January 1952	.34	214.71	42,240	4.07
February	3.03	194.83	38,400	10.42
March	5.30	217.06	42,720	14.08
April	6.95	192.18	36,960	12.06
May	3.58	188.08	34,560	11.67
June	3.95	181.29	33,120	11.98
Total	37.68	2,226.26	433,440	118.51
	20,160	306		118,400

TABLE 3
SEWAGE PUMPING STATION DATA

	Pine Lake	Sea Cliff #1	Sea Cliff #2	Vicente		
Drainage Area, Acres	3	4	83.4	51.4		
Average Lift, feet	56	49	94	56		
Light and Auxiliary power % of total KWH	Negl.	Negl.	10%	Negl.		
Max. Pumping per day % of yearly average						
KWH per million foot gallons pumped (A)	9.3 34%	8.5 37%	8.8 36%	8.9 35%		
Pumping Efficiency (3.15/A)						
	Million Gallons Pumped	Power KWH	Million Gallons Pumped	Power KWH	Million Gallons Pumped	Power KWH
July 1951	.24	20	.06	21	3.65	1,420
August	.12	16	.09	31	4.08	1,620
September	.15	19	.06	20	3.25	1,520
October	.24	41	.07	48	4.09	1,440
November	.09	1	.12	37	3.59	1,460
December	.36	46	.07	18	4.83	1,960
January 1952	.32	32	.10	35	4.07	2,180
February	0	0	.06	26	4.37	2,920
March	.30	41	.07	44	4.85	2,760
April	.17	89	.05	36	4.13	2,620
May	.19	97	.05	17	6.26	3,480
June	.19	101	.06	25	5.07	3,100
Total	2.37	503	.86	358	52.24	26,480

RICHMOND-SUNSET SEWAGE TREATMENT PLANT FLOW DIAGRAM



RICHMOND SUNSET SEWAGE TREATMENT PLANT

SUMMARY OF OPERATION - Fiscal Year 1951-1952

Sewage Flows:

Millions of gallons, by gravity (356.4 days)	2,627.8
pumped (283.7 days)	1,502.6
total	4,130.4
Average daily flow, mgd, by gravity (Actual op. time)	7.4
pumped	5.3
total	12.7

Screenings, cu ft (Sunset Pumping Station not included):

total	7,362
per million gallons	1.78

Grit and sand, cu yd: from grit tanks

from Sunset Pumping Station	2,733
total	1,870
average per million gallons	4,603
	1.11

Chlorination, lb: pre

post	122,625
total	299,460
per million gallons, pre	421,085
per million gallons, post (chlorinated flows only)	30
	90

Sedimentation:

Suspended solids, ppm, raw	229
effluent	98
per cent removed	57
per cent removed April to October	71
5-day BOD, ppm, raw	223
effluent	122
per cent removed	45
per cent removed April to October	49
Raw sludge to digester, gallons	21,453,900
dry solids, lb	6,561,500
total solids %	3.63
volatile solids	80.6

Digestion:

Sludge to elutriation, gallons	3,695,900
dry solids, lb	1,393,700
total solids, %	4.45
volatile solids, %	58.6
Gas production, metered, cu ft: to boilers	28,996,000
to waste	15,010,000
total	44,006,000

Vacuum Filtration:

Hours operated	695
Sludge filtered, gallons	2,152,300
dry solids, lb	990,500
total solids, %	5.40
volatile solids, %	57.6
Filtrate, total solids, %	.22
Ferric Chloride, lb	22,889
% on dry solids	1.33
Filter Cake, lb	3,114,000
dry solids, %	31

COST OF OPERATION

Fiscal Year 1951-1952

Item of Expenditure	Total Plant Operation	Sewage Treatment with Chlorination	Sunset Pumping Plant	Sludge Disposal Conditioning & Filtration	Sewage Treatment without Chlorination
Permanent Salaries	68,655	46,590	10,445	11,620	41,130
Holidays	1,115	755	170	190	665
Overtime	129	87	20	22	77
Temporary Salaries	1,720	1,170	260	290	1,033
Wages	17,538	11,910	2,665	2,963	10,515
Contractual	14,083	9,563	2,140	2,380	8,443
Heat, Light & Power	16,390	12,245	3,655	490	10,820
Material & Supplies	28,385	26,880	265	1,240	7,380
Total	\$148,015	\$109,200	\$19,620	\$19,620	\$80,063

Rich. & Sunset Flow (grav)
Sunset Flow (pumped)

Total 4,130 MG

Cost of Operation per MG \$35.84 \$26.44 13.06 \$ 4.65 \$19.39

Estimated cost per capita (based on 230,000 population) \$0.64 per year
3,047 cu yd filter cake estimated value \$14,199 delivered to City Parks during year for use as fertilizer

The Sunset Pumping Plant was shut down during storms in order to avoid handling excessive quantities of sand in the sump. The gravity flow was by-passed at times due to excessive quantities of sand

Additional expenditures: Painting \$2,867.23
Office Engineering 1,005.07
Equipment 8,135.47

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE I - SEWAGE TREATMENT DATA

Fiscal Year 1951-1952

Month	Flow, Million Gallons		Days By-Passed		Rain Inches	Susp. Solids,		5-Day BOD,	
	Gravity	Total	Gravity Flow	Pumped Flow		Raw	Eff	Raw	Eff
July 1951	213.9	134.0	0.1	0.1		280	100	273	144
Aug	220.5	125.3		2.3		292	89	224	119
Sept	240.4	129.0		1.0	.05	265	122	231	150
Oct	233.1	131.9		2.4	.92	238	92	248	132
Nov	301.4	114.6	0.1	5.8	3.03	210	91	215	121
Dec	202.0	84.6		12.9	6.69	198	79	162	90
Jan 1952	173.0	55.3	8.4	22.7	10.59	183	110	148	104
Feb	187.3	82.6		8.5	2.59	184	105	183	104
Mar	191.2	156.7		19.4	4.90	188	86	196	151
Apr	230.1	168.8		2.7	1.01	219	79	253	127
May	224.7	170.2		2.1	.33	239	87	248	120
June				1.4	.25	257	83	294	117
Total	2627.8	1502.6	8.6	81.3	30.36	230	98	223	122
Wt Avg*									

* Weighted averages calculated from monthly total flows

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE I - SEWAGE TREATMENT DATA (Cont'd)

Fiscal Year 1951-1952

Month	Alkalinity as ppm CaCO ₃ Raw Eff	Chlorides ppm Raw Eff	Sewage Temp F	Screen- ings, cu ft	Sand, cu yd Pre- treat set	Chlorination lb Pre Post
July 1951	181	73	71	624	105	10300 31360
Aug	182	72	72	603	185	9930 28710
Sept	201	80	74	628	162	10150 30320
Oct	188	63	74	665	277	11080 30750
Nov	170	54	71	641	305	10650 25420
Dec	145	56	65	662	406	11460 20410
Jan 1952	116	49	60	445	476	7660 10100
Feb	129	63	64	572	395	9570 20610
Mar	132	71	64	579	212	8060 7650
Apr	145	72	68	620	118	10150 27320
May	163	64	71	713	49	11830 33340
June	179	71	72	710	43	11785 32470
Total Wt avg*	163	66	69	7362	2733	122625 298460

* Weighted averages calculated from monthly total flows

Pre-Chlorination - 30 lbs per million gallons
Post-Chlorination - 9 AM to 6 PM, 100 lbs per million gallons
No Post-Chlorination when Sunset flow by-passed

RICHMOND SUNSET SEWAGE TREATMENT PLANT

TABLE II - SLUDGE TO DIGESTER AND GAS PRODUCTION

Fiscal Year 1950-1951

Month	M Gallons	% Total Solids	M lb Dry Solids	% Vol	M lb Vol	Metered Gas Production Cubic feet to Boiler Waste	Total	Digester Temp F
July 1951	2415.8	4.02	865.3	82.5	673.0	3032	5043	94
Aug	2132.8	3.87	693.9	83.5	579.4	2995	5062	94
Sept	2214.8	3.83	712.2	83.2	592.6	2883	4883	95
Oct	2317.7	3.34	649.0	84.6	549.1	3017	4988	98
Nov	1777.1	3.46	514.6	82.3	423.5	2697	4118	96
Dec	1123.2	3.68	346.9	78.8	273.4	2034	2427	95
Jan 1952	690.4	3.95	228.9	71.9	164.5	1133	1230	94
Feb	1198.6	3.08	313.8	82.2	257.9	1684	1780	94
Mar	1086.7	3.07	280.3	82.1	230.0	1922	2044	91
Apr	1895.2	3.40	562.7	81.9	443.1	2277	3277	91
May	2148.6	3.53	657.9	82.1	523.9	2774	4341	89
June	2453.0	3.57	736.0	78.9	580.8	2548	4813	94
Total	21453.9		6561.5		5291.2	28996	15010	
Wt Avg*		3.63		80.6			44006	94

* Based on accumulated totals for year. All raw sludge computations based on weight of 8.42 pounds per gallon

RICHMOND SUNSET SEWAGE TREATMENT PLANT

TABLE III - DIGESTED SLUDGE TO ELUTRIATION

Fiscal Year 1951-1952

Month	Sludge, M Gallons		Per Cent Total Solids		Dry Solids, M lb	
	From Primary	From Secondary	From Primary	From Secondary	From Primary	From Secondary
July 1951	588.6		3.59	3.59	178.7	178.7
Aug	749.4		3.58	3.58	227.4	227.4
Sept	660.0		3.59	3.59	201.0	201.0
Oct	730.8		4.27	4.27	265.3	265.3
Nov	152.5			6.28		82.3
Dec	92.6			6.57		52.3
Jan 1952	81.4			6.89		48.3
Feb	171.0		4.56	4.56	66.6	66.6
Mar	93.0			6.28		50.7
Apr	118.9			7.37		75.4
May	101.8			6.94		61.2
June	155.9			6.30		84.5
Total	2899.8	796.1	3.83	6.64	939.0	454.7
Wt Avg*				4.45		1393.7

* From accumulated totals and primary, secondary and net sludge weights of 8.45, 8.60 and 8.48 pounds per gallon

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE III - DIGESTED SLUDGE TO ELUTRIATION (Cont'd)

Fiscal Year 1951-1952

Month	Per Cent Volatile		Volatile, Thousands of lb		Avg Alk as ppm CaCO ₃
	From Primary	From Secondary	From Primary	From Secondary	
July 1951	59.5		106.3		1740
Aug	59.4		135.1		1690
Sept	59.2		119.0		1660
Oct	59.9		158.7		1450
Nov		59.7		49.1	770
Dec		58.6		30.6	680
Jan 1952		60.9		29.4	550
Feb	54.4		36.2		1090
Mar		55.8		28.3	370
Apr		54.7		41.2	440
May		56.7		34.7	650
June		56.2		47.5	900
Total	59.1	57.4	555.3	260.8	1396
Wt Avg*					

* Based upon accumulated totals for the year

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE IV - VACUUM FILTER OPERATION

Fiscal Year 1951-1952

Month	Gallons	Per Cent Total Solids		Solids M lb	% Volatile	Volatile		Ash M lb	Alk as ppm CaCO ₃
		To Filters	Filtrate			M lb	M lb		
July 1951	282.6	5.28	0.22	125.4	58.4	73.2	52.2	416	
Aug	389.6	5.31	0.19	173.8	59.7	103.8	70.0	428	
Sept	383.4	5.35	0.20	173.2	58.5	101.3	71.9	451	
Oct	425.9	5.06	0.21	181.3	58.5	106.1	75.2	434	
Nov	87.3	5.70	0.26	42.2	58.2	24.6	17.6	350	
Dec	75.9	5.67	0.22	36.6	56.2	20.6	16.0	265	
Jan 1952	40.7	6.86	0.27	23.8	56.2	13.4	10.4	548	
Feb	89.3	6.33	0.24	47.9	53.3	25.5	22.4	266	
Mar	60.8	6.72	0.24	34.8	54.1	18.8	16.0	268	
Apr	115.5	5.27	0.20	51.7	54.8	28.3	23.4	301	
May	87.5	5.73	0.19	41.9	54.7	23.0	18.9	328	
June	113.8	5.99	0.23	57.9	54.8	31.7	26.2	336	
Total	2152.3			990.5		570.3	420.2		
Wt Avg*		5.40	0.22		57.6			398	

* Based on accumulated totals for year and sludge weight of 8.52 pounds per gallon

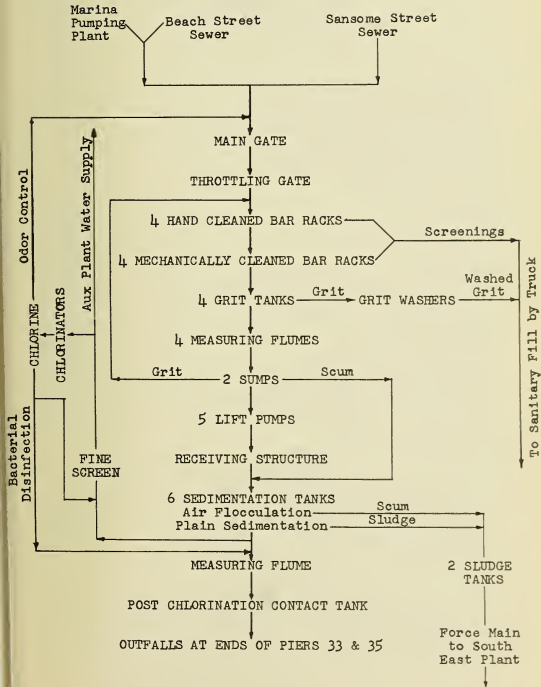
RICMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE IV - VACUUM FILTER OPERATION (Cont'd)

Fiscal Year 1951-1952

Month	lb FeCl ₃	% FeCl ₃ on Solids	Hours Filter Operated	Filters Oper- ating	lb Solids per hr	Solids lb per sq ft Filter per hr	Filter Cake % Water	Production M lb cu yds
July 1951	3100	2.47	104.10	1.47	1210	4.52	67.8	403.7
Aug	3545	2.04	140.21	1.64	1240	4.23	67.7	575
Sept	4300	2.48	103.34	2.00	1680	4.19	69.3	531.8
Oct	4160	2.29	104.81	2.00	1730	4.33	67.1	596.0
Nov	1140	2.70	30.71	1.33	1370	5.72	67.9	135.5
Dec	860	2.35	26.53	1.00	1380	6.89	69.2	112.5
Jan 1952	588	2.47	15.92	1.00	1500	7.48	68.8	74.2
Feb	1101	2.29	36.14	1.00	1330	6.63	70.0	143.3
Mar	748	2.15	25.46	1.00	1370	6.83	71.5	99.2
Apr	1125	2.18	41.09	1.00	1260	6.29	71.9	145.2
May	809	1.93	28.15	1.00	1490	7.45	69.8	126.8
June	1413	2.44	38.49	1.00	1510	7.52	68.2	184.3
Total	22889		694.95					3114.0
Wt avg*		2.33			1480	5.18	68.5	3057

* Based on accumulated totals for the year
Weight average of filtrate from filter is equivalent to 2700 gallons per hour or 22.6
thousand pounds at 8.37 pounds per gallon of filtrate

NORTH POINT SEWAGE TREATMENT PLANT
FLOW DIAGRAM



NORTH POINT SEWAGE TREATMENT PLANT

SUMMARY OF OPERATION

For Six Months
January - June 1952

Sewage Flow:

Millions of gallons (173.2 days)	8,159.0
Maximum day, mgd (Jan 25, rain)	84.8
Minimum day, mgd (June 15)	32.5
Average daily flow, mgd (173.2 days)	47.1
Average wet weather flow, mgd	60.6
Average dry weather flow, mgd	41.2
Rain, number of days with 0.01" or more	49
Rain, total inches	19.98

Screenings, cu ft:

Total	18,790
Per million gallons	2.30

Grit, cu yd:

Total	1,269
Per million gallons	0.16

Chlorination, lb:

Pre (162.3 days)	225,900
Post*	79,500
Auxiliary** (159.9 days)	27,100
Total	332,500
Average per million gallons, pre	30
Average per million gallons, post	100
Average per day, auxiliary	170

Sedimentation:

Suspended solids, ppm, raw	270
effluent	87
per cent removed	68

Raw sludge pumped to Southeast Plant,

Gallons (146 days)***	122,586,000
Gallons per day	840,000
Solids, lb (146 days)***	10,391,200
Solids per day, lb	71,000
Solids, %	1.01
Volatile, %	65.8

* For testing and adjusting chlorinating system

** For chlorinating effluent diverted for use as auxiliary plant water supply

*** Five months February - June; meter inoperative during January

SEWAGE TREATMENT PLANTS

COST OF OPERATION*

Fiscal Year 1951-1952

	North Point		Southeast	
	July-Dec 1951	Jan-June 1952	July-Dec 1951	Jan-June 1952
Permanent Salaries	33,050	54,980	30,070	61,500
Holidays		805		645
Overtime		--		265
Temporary Salaries		937		426
Wages		9,604		5,890
Contractual Services	2,748	10,035	3,210	16,121
Heat, Light & Power		25,113		12,088
Materials & Supplies		26,524		13,909
	<u>\$35,798</u>	<u>\$127,998</u>	<u>\$33,280</u>	<u>\$110,844</u>
	Flow MG	8,159	Dry Solids Processed 10,199 M lb	

Non-operating expenditures - Office Engineering 2346

* July to December 1951 represents primarily training and testing. During the period from January to July 1952, the North Point Plant was in operation and sludge treatment units at the Southeast Plant were progressively placed in operation.

NORTH POINT SEWAGE TREATMENT PLANT

TABLE I - SEWAGE TREATMENT DATA

Fiscal Year 1951-1952

Month	Flow, Million Gallons		Days in Operation	Rain Total in.	Days* No	**Susp Solids, ppm %			Alkalinity as ppm CaCO ₃		Chlorides ppm	
	Total	Daily Avg				Raw	Eff	Rem	Raw	Eff	Raw	Eff
Jan 1952	1481.4	53.9	27.5	10.69	17	+	+	+	+	+	+	+
Feb	1374.0	50.7	27.1	2.62	12	245	84	66	140	145	270	255
Mar	1484.0	52.4	28.3	4.90	10	260	90	65	165	150	290	280
Apr	1357.6	45.9	29.6	1.08	5	260	86	67	185	175	350	330
May	1249.5	40.4	30.9	.30	2	275	81	71	185	190	280	270
June	1212.5	40.7	29.8	.39	3	320	96	70	175	170	390	390
Total	8159.0		173.2	19.98	49				170	165	315	305
Wt Avg***						270	87	68				

By passing: 7.9 days, Contractor making repairs and adjustments
 0.9 day, grit pumping facilities inoperative
 Maximum pumping rate during storms limited to 90 mgd

+ No data available

* With precipitation of .01" or more

** By Gooch crucible method. Raw sewage sampled after grit chambers, effluent after post chlorination contact tank

*** In proportion to monthly flows

NORTH POINT SEWAGE TREATMENT PLANT
TABLE II - SEWAGE TREATMENT DATA (Cont'd)

Fiscal Year 1951-1952

Month	Screenings		Grit		Pre		Chlorination		Auxiliary**	
	M lb	Cu ft	M lb	Cu ft	M lb	Days	M lb	Post Days	M lb	Days
Jan 1952	+	2620	+	5150	24.1	20.1	--	--	3.1	20.1
Feb	+	3040	+	6200	30.4	27.1	22	15.0**	4.1	27.1
Mar	+	2860	+	4750	43.1	28.3	29	20.0**	4.3	28.3
Apr	247.1	3840		511.8	37.4	26.4	31	39.4	3.6	24.6
May	207.4	3460		377.6	39.8	30.6	32	3.1	5.9	30.6
June	160.3	2970		272.0	51.1	29.8	42	2.0	6.1	29.2
Total		18790		34250	225.9	162.3		79.5	27.1	159.9

+ No data available

* For chlorinating effluent used as auxiliary plant water supply

** Estimated quantity used while testing and adjusting chlorinators and controls

NORTH POINT SEWAGE TREATMENT PLANT
TABLE III - RAW SLUDGE PUMPED TO SOUTHEAST PLANT
Fiscal Year 1951-1952

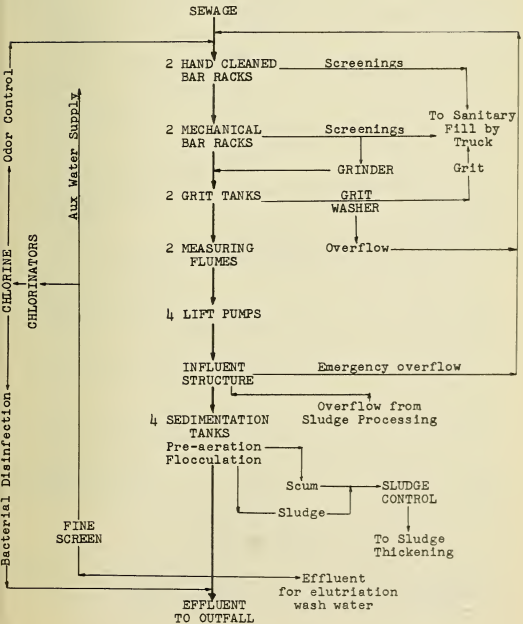
Month	M Gallons	% Solids	M lb Solids	% Volatile	M lb Volatile
Jan 1952	*	0.63	--	54.7	--
Feb	23,959	0.89	1,794.6	64.9	1,165.3
Mar	23,068	0.90	1,746.7	63.3	1,105.3
Apr	24,770	1.05	2,171.7	67.6	1,467.3
May	25,408	1.06	2,247.3	67.8	1,522.6
June	25,381	1.14	2,430.9	64.8	1,575.4
Total	122,586		10,391.2		6,835.9
Wt Avg Feb - June**		1.01		65.8	

* Meter inoperative

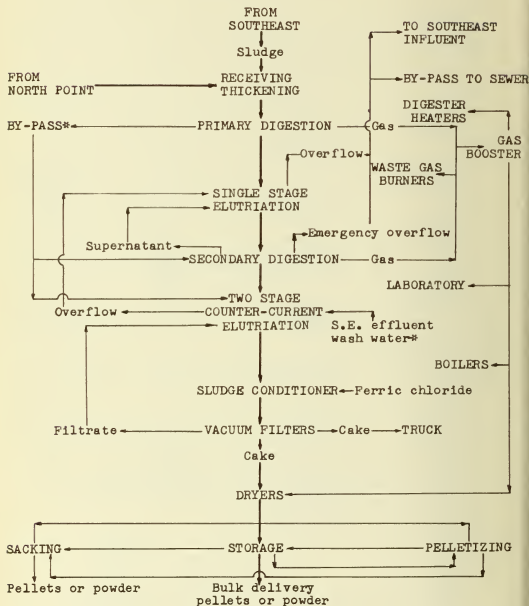
** Based on accumulative totals for period, and sludge weight of 8.37 pounds per gallon

SOUTHEAST SEWAGE TREATMENT PLANT

SEWAGE FLOW DIAGRAM



APPENDIX IV
SOUTHEAST SEWAGE TREATMENT PLANT
SLUDGE FLOW DIAGRAM



* The lack of S. E. effluent made it necessary to use a limited amount of City water for elutriation and to by-pass single stage elutriation.

SOUTHEAST SEWAGE TREATMENT PLANT

SUMMARY OF OPERATION

December 1, 1951 to June 30, 1952

Raw sludge from North Point Plant:**

Gallons (146 days)**	122,586,000
Gallons per day (146 days)**	840,000
Solids, lb	10,430,000
Solids, lb per day (146 days)**	72,000
Solids, %	1.02

Sludge to primary digestion:

Gallons	26,832,000
Solids, lb	10,199,000
Solids, %	4.46
Volatile, lb	6,771,000
Volatile, %	67.4
Recovery in thickening tanks, %	92

Gas production and usage, cu ft:

Total produced	73,748,000
To sludge heaters	18,486,000
To boilers	4,860,000
To dryers	8,344,000
To waste	42,058,000
Cubic feet gas per pound of volatile added	10.89

Vacuum filter operation:

Unit hours	413
Equivalent hours, one filter	726
Sludge filtered, gallons	7,654,000
solids, lb	6,056,000
solids, %	9.35
Ferric chloride used, lb, anhydrous	55,490
% on dry solids	4.99
Filter cake produced, lb cake	2,975,000
solids, %	36.6
solids, lb	1,111,000
Filter cake to dryers, lb	2,750,000
Filter cake delivered, lb***	125,000

Dryer operation:

Operation, hours	381
Dried material delivered, lb***	1,206,000
moisture %****	12.5

* Based on five months operation Feb to June

** Actual days of operation

*** Delivered to San Francisco Recreation and Park Department

**** Initial testing operation. Less than 10% moisture expected during normal operation

SOUTHEAST SEWAGE TREATMENT PLANT
TABLE I - RAW SLUDGE THICKENING

Fiscal Year 1951-1952

Month	Sludge from North Point		M		Sludge to Digesters		M lb	
	Gallons*	% Solids	M lb Solids	Gallons	% Solids	M lb Solids	Volatile	Volatile
Dec 1951	+	+	+	49	5.58	27	52.5	14
Jan 1952	+	+	+	2,117	4.50	881	57.2	486
Feb	23,959	0.90	1,804	5,174	3.96	1,689	62.4	1,042
Mar	23,068	0.83	1,603	4,354	4.25	1,608	65.7	1,029
Apr	24,770	1.07	2,219	5,256	4.49	2,006	70.6	1,416
May	25,408	1.16	2,467	5,160	4.62	1,995	71.6	1,408
June	25,381	1.10	2,337	4,722	4.96	1,993	68.9	1,376
Total	122,586		10,430	26,832		10,199		6,771
5-month total			10,430	24,666		9,291		6,271
Wt avg Feb to June**		1.02			4.46		67.4	

Seeding of digesters started Dec 10, 1952 with 1,000,000 gallons sludge from Richmond-Sunset Plant and completed Jan 10, 1952. Digesters in normal operation Feb 18, 1952

+ No data available

* North Point meter readings

** From accum. totals and raw and digested sludge weights of 8.37 and 8.14 lb/gallon

SOUTHEAST SEWAGE TREATMENT PLANT

TABLE II - POWER AND FUEL

Fiscal Year 1951-1952

Month	Power M kwhr	Natural Gas M cu ft	To Sludge Heaters	To Dryers	Digester Gas, M cu ft To Boiler To Waste	Total
Dec 1951	49.2	460	--	--	129	129
Jan 1952	94.8	1,566	--	--	2,754	3,754
Feb	84.0	11	4,363	--	1,255	10,700
Mar	74.4	--	3,993	--	1,130	11,965
Apr	103.2	--	3,692	3,503	815	15,153
May	151.2	--	3,396	3,582	896	17,527
June	106.2	6	3,042	1,259	764	14,520
Total	663.0	2,043	18,486	8,344	4,860	73,748
Avg month			3,697			
Daily avg Feb to June			122		32.2	462.7

SOUTHEAST SEWAGE TREATMENT PLANT

TABLE III - DIGESTED SLUDGE TO ELUTRIATION

Fiscal Year 1951-1952

Month	M Gallons	% Solids	M lb Solids	% Volatile	M lb Volatile	pH	Alk as ppm CaCO ₃	Digester Temp F
Apr 1952	6,001	9.55	4,892	36.6	1,790	7.0	2,000	95
May	1,062	7.83	790	37.5	297	7.2	2,650	95
June	591	8.61	374	39.7	142	7.0	2,900	95
Total	7,654		6,056		2,239			
Avg						7.0	2,517	95
Wt avg*		9.35		37.0				

* Based on accumulated totals for 3 months and 8.54 lbs per gallon weight of sludge

SOUTHEAST SEWAGE TREATMENT PLANT

TABLE IV - VACUUM FILTER OPERATIONS

Fiscal Year 1951-1952

Month	Unit hr**	Filter Operation		Ferric Chloride Pounds	% on Solids	Filter Cake Produced, M lb		To Dryer Solids Cake	Haulage**** Solids Cake Solids
		Equiv Filter hr***	ounds solids per sq ft/hr			%	Solids		
Apr 1952	66	96	1,171*	3.3*	11,160	9.93*	36.2	+	89
May	275	496	1,615	4.6	31,680	3.93	36.4	2,055	762
June	72	134	1,927	5.9	12,650	4.51	37.0	695	258
Total	413	726			55,490			2,750	1,020
Wt Avg			1,571	4.6		4.99	36.6		225
									91

+ No data available

* Based on filter cake haulage figure

** Represents total hours filtration units in operation regardless of number of filters used

*** Equivalent filter hours for single filter operation

**** Haulage represents filter cake delivered to Recreation and Park Department

SOUTHEAST SEWAGE TREATMENT PLANT

TABLE V - DRYER OPERATION

Fiscal Year 1951-1952

Month	Hours	Dryer Operation Solids to Dryer/hr	Water Evap lb per hr	M lb Dried Material	Production % Moisture Dried Material
Apr 1952	38.5	+	+	186.9	16.7
May	275.5	2,798	4,497	732.2	10.7
June	67.0	3,608	6,497	286.8	9.6
Total	381.0			1,205.9	

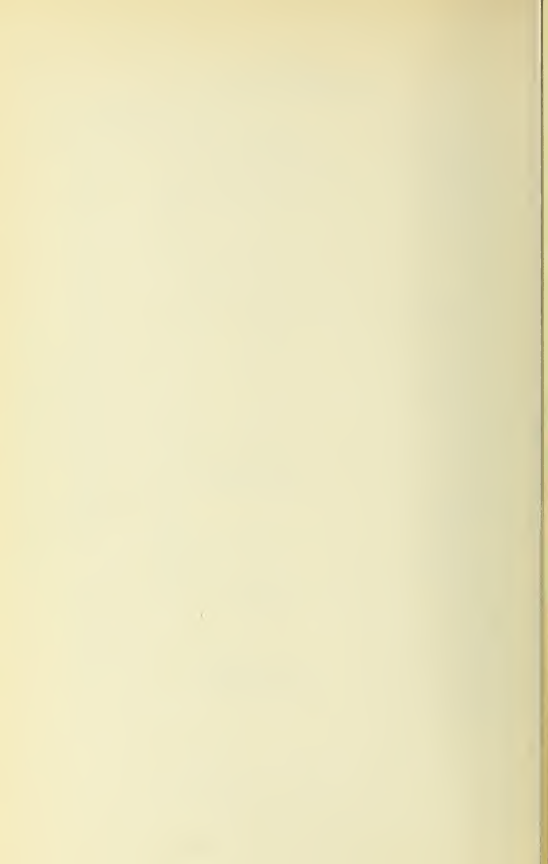
All dried material delivered to Recreation & Park Department

+ No data available

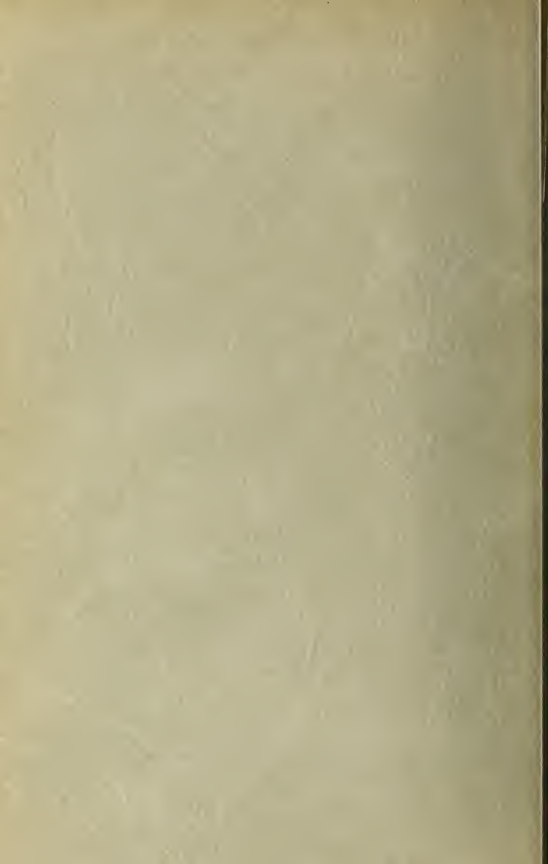
APPENDIX V

MAINTENANCE & OPERATION

<u>Through Retirement</u>	<u>Bureau</u>	<u>Length of City Service in Years</u>
Cornelius Healy	Sewer Repair	25
Jeremiah Buckley	"	26
R.P. Molinari	Street Repair	6
George McDougall	"	23
E.H. Prentice	"	26
John Leslie	"	12
Patrick O'Leary	"	9
J.J. Shanahan	"	11
E.E. Snider	"	27
Louis Pluth	Street Cleaning	11
F.T. Kane	"	16
Elleno Gigli	"	26
Charles Edwards	"	15
Michael Clifford	"	14
John Murphy	"	27
Barney Duggan	"	26
Arnold Shori	"	12
Michael Foley	"	27
J.A. Freinstein	"	27
Michael Yerse	"	15
Giuseppe Gavazza	"	27
Frank Kelly	"	22
Thomas McHugh	"	6
Edward Moss	"	27
Michele Perata	"	7
H.C. Horgan	"	36
L.F. Matthews	Building Repair	7
J.A. Vaughn	"	17
Stephen Krile	"	8
Walter Dressler	"	15
William Gallagher	"	7
Timothy O'Shea	"	38
<u>Through Death</u>		
Tony Mihelcie	Sewer Repair	23
A.L. Gullixon	"	11
C.J. Tednes	"	8
T.P. Moloney	"	25
W.J. Murphy	"	12
D.J. Murphy	"	26
P.J. Maguire	"	20
John Klinger	Street Repair	9
D.B. Shafer	Street Cleaning	17
Daniel Da Costa	"	6
M.L. Gaston	"	4
M.J. Haley	"	17

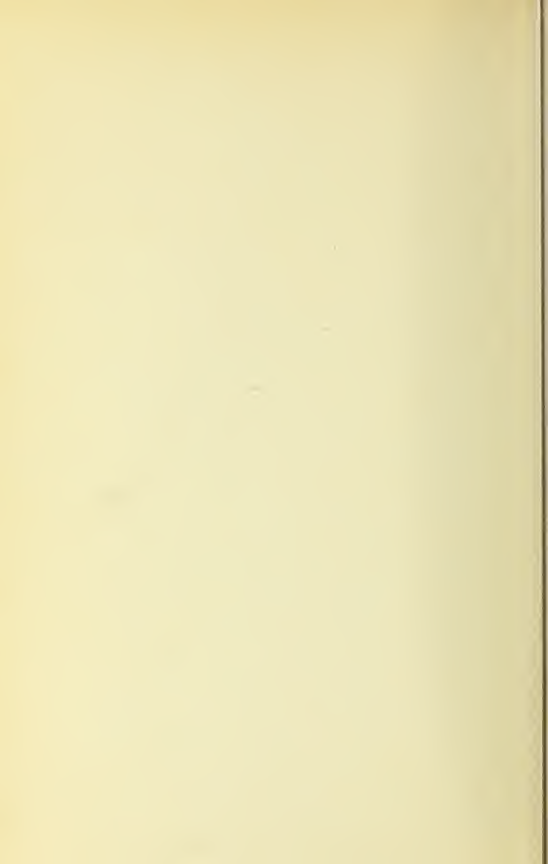






ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF
SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1953



ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1953

ELMER E. ROBINSON

THOMAS A. BROOKS

SHERMAN P. DUCKEL

MAYOR

CHIEF ADMINISTRATIVE OFFICER

DIRECTOR OF PUBLIC WORKS



BROADWAY TUNNEL
East Port

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- III Sewage Pumping Stations, Capacity Records

MAYOR

ELMER E. ROBINSON

**CHIEF
ADMINISTRATIVE
OFFICER**

THOS. A. BROOKS

ORGANIZATION CHART

DEPARTMENT OF PUBLIC WORKS

JUNE 30, 1953

CITY AND COUNTY OF SAN FRANCISCO

DIRECTOR

SHERMAN P. DUCKEL

**ASST. DIRECTOR
ADMINISTRATIVE**
F. W. MCKENZIE

**ASST. DIRECTOR
MAINT. & OPERATION**
L. J. ARCHER

BUREAU OF ENGINEERING
CITY ENGINEER RALPH G. WADSWORTH

BUREAU OF BUILDING INSPECTION
SUPERINTENDENT LESTER C BUSH

BUREAU OF ARCHITECTURE
CITY ARCHITECT DODGE RIEDY

GENERAL OFFICE

BUREAU OF STREET REPAIR
SUPERINTENDENT F. D. BROWN

BUREAU OF ACCOUNTS
SUPERVISOR J. J. MCLOSKEY

BUREAU OF SEWER REPAIR
SUPERINTENDENT E. F. MUHEIM

CENTRAL PERMIT BUREAU
SUPERVISOR S. J. ROSENBLUM

BUREAU OF BUILDING REPAIR
SUPERINTENDENT H. H. HANSSEN

BUREAU OF STREET CLEANING
SUPERINTENDENT S. J. SULLIVAN

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

OFFICE OF THE
DIRECTOR OF PUBLIC WORKS

October 15, 1953

280 CITY HALL
SAN FRANCISCO 2,
CALIFORNIA

Annual Report
1952-1953

Honorable Thomas A. Brooks
Chief Administrative Officer
City and County of San Francisco

Dear Sir:

I submit herewith, in accordance with the provisions of Section 20 of the Charter of the City and County of San Francisco, the Annual Report of the Department of Public Works for the fiscal year ending June 30, 1953.

The report is divided into nine sections, each section covering the activities of the nine bureaus indicated on the Organization Chart on the opposite page. The Summaries of Contract Data and the Summaries of Operational Data for the various Sewage Pumping Stations appear in the back of the report under Appendixes I to III inclusive. A Summary of Operational Data for the three Sewage Treatment Plants is not included in this report but is available in separate form for those requesting this information.

The heavy design and construction loads of the Bureau of Engineering and the Bureau of Architecture under the able guidance of Ralph G. Wadsworth, City Engineer and Dodge A. Riedy, City Architect, respectively continued during the year. The actual total of the cost of construction performed under the supervision of these bureaus during the past year amounted to approximately \$16,000,000.00.

The Maintenance and Operation Bureaus under L. J. Archer, Assistant Director of Public Works, carried on an increased work program with a reduction in the number of employees from the previous year. This was made possible by your policy of providing

improved and new equipment for our use.

The administrative functions of the department under the guidance of F.W. McKenzie, Assistant Director of Public Works, were also carried on with no increase in personnel.

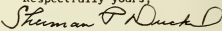
The Bureau of Building Inspection with its Electrical Inspection Division continued to enforce all code requirements and during the fiscal year inspected \$45,920,105.00 of private work.

For the past year a Department-wide safety program has been in effect in an effort to lower the accident rate particularly of the Maintenance and Operation Bureaus. In the coming year it is anticipated that interest in the program will be greatly increased by means of safety aids such as bulletin board posters and monthly safety booklets which will be distributed to all personnel.

The Department has participated in all City-wide drills of the San Francisco Disaster Council and Corps during the year. Twenty-four departmental vehicles have been equipped with two-way mobile radio units which will be put into full use this fall.

The need for additional funds to complete and modernize our sewer system is now evident and if San Francisco is to continue its excellent program of sewage treatment, an amount of \$12,000,000 should be made available as soon as possible to complete the urgently needed units of this program.

I must commend all Bureau heads and their staffs on the excellent loyal manner in which they carried out their assignments. I must also thank you, Mr. Brooks, for the usual fine help and support given the Department and me throughout the year.

Respectfully yours,

Sherman P. Duckel, Director
Department of Public Works



SAN FRANCISCO AND THE GOLDEN GATE BRIDGE
World's Longest Single Span Suspension Structure

Courtesy Redwood Empire Ass'n.

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

ORGANIZATION CHART

JUNE 30, 1953

CITY ENGINEER
ASST CITY ENGINEER

STAFF DIVISIONS

CONTRACT
ADMINISTRATION
PAYMENTS-RECORDS

OFFICE
MANAGEMENT
PERSONNEL-PURCHASING

LINE DIVISIONS

DIVISION OF
STREETS & HIGHWAYS

1-STREET IMPROVEMENTS
(a) IMPROVEMENT PLANS
(b) ASSESSMENTS
(c) PERMITS & INSPECTIONS
2-HIGHWAYS
3-TRACK REMOVAL CONTRACTS
4-PLANS & RECORDS

DIVISION OF
DESIGN

1-ADMINISTRATIVE
2-STRUCTURAL
3-SEWERS
4-SEWAGE DISPOSAL
5-MECHANICAL
6-ELECTRICAL
7-UNDERGROUND STRUCTURES
8-HYDRAULICS
9-SPECIFICATIONS & ESTIMATES

LINE DIVISIONS

DIVISION OF
TRAFFIC ENGINEERING

1-DESIGN
2-OPERATION
3-MAINTENANCE

DIVISION OF
SURVEYS & MAPPING

1-STREET GRADES
2-SUBDIVISIONS
3-SURVEYS

LINE DIVISIONS

DIVISION OF
CONSTRUCTION

1-INSPECTION
2-TESTING LABORATORY
3-SANITARY FILL
4-RECORDS REPORTS

DIVISION OF SEWAGE &
WASTE TREATMENT

1-RICHMOND SUNSET PLANT
2-NORTH POINT PLANT
3-SOUTHEAST PLANT
4-INVESTIGATIONS

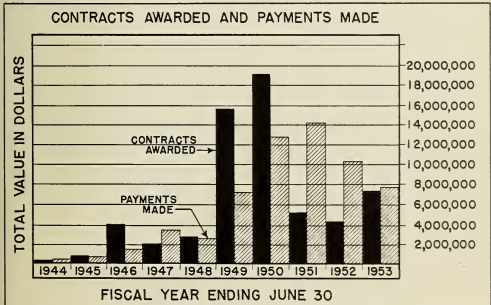
BUREAU OF ENGINEERING
Ralph G. Wadsworth, City Engineer

GENERAL REVIEW OF YEAR'S WORK

CONTRACTS AWARDED

During the fiscal year 1952-53 the Bureau of Engineering planned a series of construction contracts which were awarded at a total value of about \$7,278,000, including a wide variety of street, sewer, traffic signal and other important public improvements. The total value of the contracts awarded has been exceeded only twice in the past ten years and was 65% greater than during the preceding fiscal year (See Chart below). In addition to City financed projects, the total included street improvements in various parts of the City financed by property owners to the extent of \$505,400.

Street and highway improvements were provided by thirty-nine contracts which brought about the reconstruction or resurfacing of 31.5 miles of city streets and highways. Included were the widening of San Jose Avenue through Bernal Cut, the extension of Stanley Drive to Alemany Boulevard, the widening of Laguna Honda Boulevard and the channelization of the main entrance to Golden Gate Park at Stanyan Street. Eleven track removal contracts were awarded providing for the improvement of 14.15 miles of streets, which brings the total mileage of streets completed or awarded under this program to 89.9 miles. Only about 14.7 miles of the original track removal program remain to be undertaken.



Bureau of Engineering

Traffic signal contracts awarded during the year will add 80 modern signalized intersections to the traffic signal system. By far the largest traffic signal contract ever awarded in San Francisco was the Mission District system, which involves a comprehensive grid system with 41 interconnected signalized intersections.

Sewer contracts were awarded in the total amount of \$2,720,000, the largest being for a 3700-foot sewer tunnel under Hunters Point Hill. Other contracts provided important units of the Southeast Collecting Sewer System, together with a number of urgent storm sewer enlargements, such as the main sewer in 18th Street.

The locations of contracts awarded are indicated, so far as they can be, on the accompanying map.

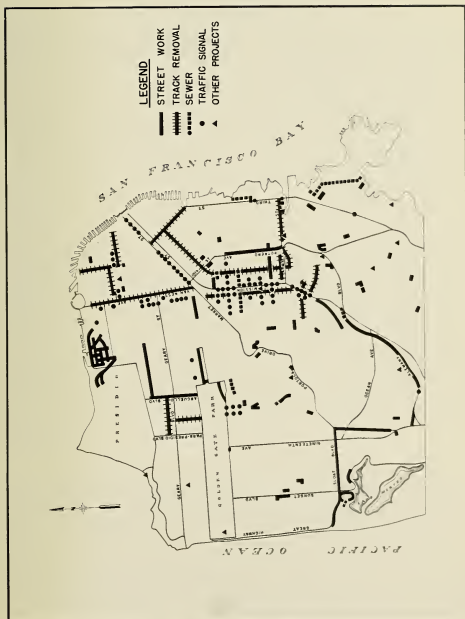
PROJECTS COMPLETED DURING YEAR

Several major highway projects awarded previously were completed during the past year, including the reconstruction of the State Highway Cross-Over through Golden Gate Park, the channelization of Sloat Boulevard and the widening of roadways on Monterey Boulevard. The Broadway Tunnel awarded in 1950 was completed and opened to traffic on December 21, 1952. The tunnel is operating satisfactorily, is carrying the full amount of traffic which was anticipated by predictions made in 1945, and has already earned a reputation for being the best lighted tunnel in the country. The total cost of the project including land and engineering was \$7,522,622.

CURRENT CONTRACT DATA

The following tabulation shows the number and value of contracts awarded during the fiscal year 1952-1953 in each of the main categories of construction work. The tabulation also shows the total value of the work actually performed during the year on all contracts which were active, including those awarded but not completed in preceding years.

Bureau of Engineering



Bureau of Engineering

CURRENT CONTRACT DATA SUMMARY
SHOWING ALL CONTRACT WORK AWARDED OR UNDER WAY
JULY 1, 1952 to JUNE 30, 1953

Table	Type of Construction	No.	Contracts Awarded	Amount Expended
			Aggregate Value	Fiscal Year 1952-53
A	Major Thoroughfares	14	\$1,273,531.05	\$1,279,744.10
B-1	Streets-Private Contracts	26	365,445.00	348,072.00
B-2	Streets-Assessment Proceedings	15	139,996.67	155,419.09
B-3	Streets-Public Contracts City Pay	12	116,498.71	88,791.44
B-4	Street Car Track Removal	11	1,861,423.80	1,867,311.31
C	Traffic Signals and Channelization	9	579,950.99	293,185.00
D-1	Sewers, Pipe Vitrified Clay and Concrete	7	440,509.69	298,709.68
D-2	Sewers-Concrete Monolithic	6	2,281,894.40	1,448,704.50
E-1	Miscellaneous	18	218,697.77	2,094,761.67
TOTALS		118	\$7,277,948.08	\$7,874,698.79

A detailed listing of the contracts under way during the year will be found in Appendix I. A separate tabulation is given for each of the categories of construction work, the various tables being designated by the letters and figures shown in the first column of the above summary.

The total number of contract awards is only five greater than during the preceding year but their total value is about \$2,800,000 greater. The amount expended through payments to contractors was \$7,874,699, which happens to be nearly the same as the total value of the awarded contracts.

Bureau of Engineering

GENERAL SERVICES ENGINEERING

The Bureau of Engineering handled a wide variety of proceedings and services in connection with construction and maintenance of streets and sewer systems and in providing advice and information to the public and to other City Departments. The Bureau issued 22 Street Improvement Assessments, posted 400 Field Notices, approved two subdivisions, revised or established 10 street grades, inspected sidewalks on 35,248 lot frontages or about 14% of all frontages in the City, inspected 13,456 pavement excavations, issued 4613 notices to property owners about sidewalk repairs, made 321 surveys, performed 2800 laboratory tests and investigated 229 damage claims. In addition, the Bureau investigated numerous matters referred to it for consideration by various City officials and numerous private organizations and individuals.

TREATMENT PLANT OPERATION

The last unit of the Sewage Treatment System was placed in operation on November 28, 1952, and all three plants have been in operation since that time taking care of sewage from all parts of the city. The plants are operated on a 24-hour day, 7-day week schedule, requiring the employment of 100 men. The operation of the North Point Plant has already produced marked improvement in the waters of the bay, and has resulted in the lifting of the quarantine against swimming at Aquatic Park. An improvement in the quality of water is noticeable in both the Channel and Islais Creek. The total cost of operation of the three treatment plants is about \$860,000 per year. Plant personnel, especially laboratory technicians, are working continuously on methods to increase plant efficiency and reduce the consumption of plant chemicals.

Although the plants are in operation they are not yet receiving all of the city's sewage. In substantial areas in the southeast part of the city and along the shoreline from Union Street to the Channel, numerous small sewers are still discharging raw sewage into the bay. To comply with State Law and to complete the improvement of water quality along our shore line, additional collecting sewers must be built to divert all of this sewage to the treatment plants. Funds still on hand from previous bond issues are not sufficient to complete but a small part of this remaining work. It is estimated that the most urgent collecting sewers, together with a number of indispensable storm sewer extensions and enlargements will require about \$12,000,000 in addition to the small amount now on hand. In the interest of public health and the preservation of the bay waters for recreation and other uses it is essential that additional funds be provided by a new bond issue or by some other means.

Bureau of Engineering

CONSTRUCTION FUNDS

State gas tax funds are the principal support of the normal street and highway construction program. Bond funds are being used for removal of street car tracks and a portion of the traffic signals. Sewers are being built principally from bond funds supplemented by State aid and limited amounts of general tax funds. Balances still available in the several bond funds on June 30, 1953 were approximately as follows:

Sewer Bonds of 1944, available for extension and enlargement of main sewers	\$1,511,436.32
Street Improvement Bonds of 1947, available for track removal, traffic signals and other major thoroughfare improvements	7,556,969.04
Sewage Treatment Bonds of 1948, available for treatment plants and collecting sewers	1,873,298.69

Total gas tax allocations received by San Francisco for major streets and county roads amount to about \$5,000,000 annually. Of this amount nearly \$2,000,000 is required regularly for maintenance, leaving about \$3,000,000 available annually for new construction.

STORM AND SANITARY SEWERS

1944 PROGRAM

Since about 1909, when the first comprehensive sewerage plan was adopted, San Francisco has been in the process of modernizing, enlarging and extending its system of main sewers, which with a few exceptions are designed to carry both storm flow and domestic sewage. The work has been financed from time to time by bond issues and general fund appropriations. In 1944 a bond issue was voted in the amount of \$12,000,000 to carry out a program intended primarily to provide necessary immediate enlargements and extensions of the system of main storm and sanitary sewers. The enlargements had been found necessary to prevent the flooding of streets and private property caused by inadequate capacity of old sewers at times of heavy rainfall. Their purpose is principally to avoid damage claims against the City but also to remove a health menace caused by the flow of polluted water upon the streets and into privately owned property.

The accompanying map entitled '1944 Sewer Program' indicates the progress which has been made toward completing the contemplated work. By means of the legend, the map indicates the projects

Bureau of Engineering

in the original program which have been completed and those which have been deferred for various reasons. The map also shows various additional extensions and enlargements which have been made from time to time. These were projects which required immediate action and were therefore given priority over certain of the originally approved projects. From the map it will be noted that a majority of the major projects in the original program have been completed.

WORK UNDERTAKEN DURING PAST YEAR

Storm and sanitary sewers provided by contracts awarded during the year included several extensions, three major enlargements, a number of new sewers in new or reconstructed streets and the replacement of a sewer destroyed by a landslide. The various sewer contracts are listed in Tables D-1 and D-2 of Appendix I. Some of the more significant jobs are briefly described in the following paragraphs.



1944 SEWER PROGRAM

Bureau of Engineering

Castenada Sewer

During heavy rains in early December 1951 the steep slope between Castenada Avenue and Laguna Honda Boulevard opposite Clarendon Avenue was washed out, causing the loss of a portion of the existing sewer and the complete destruction of a house on Castenada Avenue. (See photograph on page 30 of last year's report). A temporary corrugated metal pipe sewer was installed in a few days on an emergency basis. Plans were drawn up for a new permanent sewer located on firm but steeply sloping ground clear of the washout area. A contract was awarded in August 1952 for a 16 inch concrete-coated steel pipe sewer with flexible joints but to avoid delay due to material restrictions on this type of pipe, 18-inch vitrified clay pipe encased in reinforced concrete was substituted. The washed out slope material was replaced and the slopes planted to prevent erosion.

Skyline-Sunset Outlet Sewer

Pending construction of a permanent outlet for Lakeshore Country Club Acres Subdivision on Skyline Boulevard east of Fleishhacker Zoo, a temporary sewer connection to serve the first group of houses was made to the existing sewer in the Zoo, with a temporary storm water overflow to Lake Merced. Plans for a permanent outlet sewer through the Zoo and in 44th Avenue are now under way.

14th Street Sewer: Folsom to Harrison

Due to continual complaints of flooded buildings and streets in this vicinity, a contract was awarded for constructing a 6'-3" diameter reinforced concrete sewer on piles at a contract cost of \$133,719. This sewer, with a gradual connecting curve into the Harrison Street sewer, will replace an existing 6-foot diameter concrete sewer which had settled badly, was partly filled with silt, and had a poorly designed connection to the Harrison Street sewer. This sewer will reduce flooding but will not give complete relief until the overflow system in Division Street is enlarged.

Naglee Avenue Sewer

A new 18-inch pipe sewer was built on the line of Naglee Avenue between Cayuga Avenue and Alemany Boulevard to replace an existing 12-inch pipe which was out of order due to the excessive 35-foot fill that had been built above it when Cayuga Avenue was improved. The new sewer will not be subject to plugging and has corrected the insanitary conditions which gave rise to complaints of nuisance and odors.

Bureau of Engineering

Jackson Street: Mason to Powell

The existing 2'x3' brick sewer in the center of this street was in poor condition and was difficult to maintain because of existing cable car tracks. In order to permit uninterrupted future operation of the cable cars, it was decided to abandon the center line location and to construct two new pipe sewers, one on each side of the street. The work was timed to precede reconstruction of the cable car tracks which is to be undertaken shortly by the Municipal Railway. The contract provided for 18-inch and 8-inch diameter V.C.P. sewers at a cost of approximately \$28,800.

Parnassus Avenue Sewer: Arguello Boulevard to Stanyan Street

Due to the inadequacy of the existing 8-inch to 16-inch diameter sewers in this street to meet the demands of new University of California Hospital buildings, a contract was awarded for installation of large vitrified clay pipe sewers, 21-inch to 30-inch diameter, mostly on reinforced concrete foundations. This project involved the first use of vitrified clay pipe as large as 30-inch diameter, 24-inch diameter having previously been the largest size adopted for use by the City.

18th Street Sewer Section 'A': Shotwell to Church Streets

This project, one of the original 1944 Bond Issue projects, was advanced from deferred status to high priority because of continual complaints of flooding of buildings and streets. Besides being too small, the existing 5-foot diameter brick sewer was practically worn out. Studies indicated that, to prevent flooding, an 8'-0" diameter sewer was required between Shotwell and Guerrero Streets and a 7'-3" diameter sewer between Guerrero and Church Streets. Test borings showed that piles would be required for the greater portion of the length due to the existence of an old creek and lake bed under the street. A contract was awarded for \$641,679 covering approximately 3500 feet of reinforced concrete sewer on piles. Necessary street widening and repairing between Harrison and Guerrero Streets was included in the same contract. This project is one of the largest sewer contracts awarded in recent years.

Laguna Honda Boulevard at Clarendon Avenue

In conjunction with a major street widening contract in Laguna Honda Boulevard between Dewey Boulevard and Clarendon Avenue, 36-inch, 48-inch and 57-inch reinforced concrete pipe sewers were provided to accommodate a future sewer planned for Clarendon Avenue and to augment the sewer capacity in Laguna Honda Boulevard.

Bureau of Engineering

EXTENSIONS AND ENLARGEMENTS REQUIRED

In spite of the large amount of work done since passage of the 1944 Bond Issue, many additional sewer extensions and enlargements must be undertaken to prevent threatened flooding of various business and residential districts and to provide main sewer outlets for new subdivisions and reclaimed tide lands. Some of these projects are urgently needed at the present time and have been tentatively planned. Others are dependent on the rate of development of marginal areas of the City and can be planned and financed when the need arises. The accompanying map entitled 'Sewer Extensions and Enlargements Required' shows by means of the legend the projects now financed, those for which new funds are urgently needed and the remaining necessary projects which can now be foreseen.

Included in the projects now financed are the following:

- Extension of the Ingleside system to Miramar Avenue
- New sewer for Skyline-Sunset-Zoo area
- Extension of Guttenberg sewer to County Line
- Enlargement of sewer in Silver Avenue

The following are typical urgently needed projects which require immediate financing:

- Extension of Lake Street system along Arguello Boulevard
- Reconstruction of 5th Street sewer, Shipley to Harrison
- Division Street relief sewer
- Construction of 23rd Street sewer to serve industrial area
- New sewer in Glen Canyon to serve Diamond Heights
- Redevelopment



SEWER EXTENSIONS AND ENLARGEMENTS REQUIRED

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COST ESTIMATES

Preliminary estimates of the cost of all remaining work needed to complete the storm and sanitary system are as follows:

Projects to be financed with present funds	\$1,895,000
Projects which should now be financed by bond issue or otherwise	5,470,000
Projects which can be deferred	13,000,000
TOTAL STORM AND SANITARY SEWER PROGRAM	\$19,470,000

SEWAGE DISPOSAL PROGRAM

TREATMENT PLANT CONSTRUCTION

San Francisco's program for purifying sewage before it is discharged into the bay or ocean has been under way since 1933. The first treatment plant, located in Golden Gate Park and the main collecting sewers for the westerly portion of the City were built by 1939. Funds for planning the plants to serve the easterly portion of the City were made available by the Bond Issue of 1944. A subsequent bond issue in 1948 provided \$15,000,000 for construction of the plants and some of the necessary collecting sewers. At that time about 55 separate outfalls were discharging raw sewage into the bay.

Construction work has proceeded rapidly since 1948. The North Point Plant and the Southeast Plant have been completed and the Richmond-Sunset Plant has been enlarged so that capacity is now available to treat all of the City's sewage for many years to come. All of the plants are now in operation.

COLLECTING SEWER PROGRAM

A good beginning has been made in the construction of the collecting sewer systems required to divert raw sewage outflows to the new treatment plants. Diversion sewers were built along the north shore, including pumping stations at the foot of Hyde Street and under the Marina Green. Large flows entering Islais Creek have been diverted to the Southeast Treatment Plant and other facilities in the southeast district are under construction. Plans are being prepared for collecting sewers still needed in the downtown district, in the vicinity of the Channel and in the southerly part of the southeast district.

WORK UNDERTAKEN DURING PAST YEAR

Contracts were awarded during the year for six units of the

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sewer collecting system in the southeast district at a total cost of \$1,782,214. The individual contracts are listed in Tables D-1 and D-2 of Appendix I and are briefly described below.

Islais Creek North Shore Diversion (Secs. C-1 and C-2).

These contracts included the Third Street Diversion Structure on the north side of Islais Creek (Sec. C-1) and the Islais Creek North Shore Sanitary Sewer (Sec. C-2) extending westerly to the intercepting sewer at the foot of Marin Street. The former consists principally of a reinforced concrete weir structure on piles in the middle of Third Street. The latter involves 1700 feet of 24-inch diameter V.C.P. sewer encased in concrete and supported on piles. It is being built for the most part in a sewer easement through private property.

Mendell Street Outfall and Diversion

This project in Mendell Street between Davidson and Fairfax Avenues consists of a 21-inch V.C.P. replacement of a worn out storm and sanitary sewer running from Evans Avenue to Davidson Avenue and a 12-inch diversion sewer running from Davidson Avenue back to Fairfax Avenue. Both are being built on piles in the same trench. This work will stop the dry season flow of raw sewage into an open channel which now runs across partly filled-in tidelands to the bay. This channel will still carry storm overflow during rainy periods and, because of its unsightly appearance and inadequate maintenance, must be replaced before long by a further extension of the Mendell Street sewer to the shore line at Arthur Avenue.

Hunters Point Tunnel and Connections (Secs. E-2, F-1, F-2 & F-3)

The work under this contract will eventually divert to the Southeast Plant all sewage flow from the valley between Candlestick Point and Hunters Point and will also provide an outlet for the San Francisco Navy Yard and a small area of the City on the northerly slope of Hunters Point. The tunnel runs from a south portal at Palou and Griffiths Streets to a north portal at Keith Street and Fairfax Avenue, a distance of 3700 feet. All but about 600 feet had been driven up to June 30, 1953. The ground formation penetrated is in general a dry serpentine which has given little trouble from a construction standpoint. The reinforced concrete lining will be circular in section with a 6'-6" diameter. The contract amounting to \$1,275,000 includes sewers and diversion structures at both ends of the tunnel.

Diversion to Alemany Sewer at Cayuga Street (Sec. J)

The purpose of this structure is to divert all sanitary sewage from the Cayuga Avenue sewer into the Alemany sewer and thence to the Southeast Treatment Plant, instead of permitting

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HUNTERS POINT SEWER TUNNEL
UNDER CONSTRUCTION

it to flow to the North Point Treatment Plant via the College Hill tunnel, thus improving the distribution of the load between the two plants and reducing sludge pumping at the North Point Plant. The diversion structure is so arranged that, in case of emergency or desired redistribution of the load, the flow can be rediverted to its original course through the College Hill tunnel.

Mariposa Diversion and Pumping Station (Secs. D-1, D-2 and D-3).

The contract for this project includes a diversion structure and sewage pumping station near the present outlet of the Mariposa Street sewer and an extension of the present 6 foot outfall sewer for a distance of 44 feet into the bay to accommodate anticipated filling of off-shore tideland. The structures will be of reinforced concrete supported on piles. The pumping station will have a maximum capacity of 1300 g.p.m. against a dynamic head of 65 feet. The force main, already completed, runs for a distance of 2750 feet along Illinois and 22nd Streets to Third Street where it changes to a 15-inch V.C.P. gravity line that runs 350 feet southerly to connect to the existing main sewer, the overall length being 3100 feet. It is a mortar lined and coated steel pipe 10-inches in diameter with bolted flexible joints.

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ADDITIONAL COLLECTING SEWERS REQUIRED

Upon completion of current contracts, the 55 raw sewage outfalls which existed in 1948 will have been reduced to 20, located as follows:

- 9 along The Embarcadero at Union, Broadway, Jackson, Howard, Bryant, Brannan, Townsend, King and Berry Streets
- 7 along the Channel between 3rd and 7th Streets
- 3 between Hunters Point and Candlestick Point located at Griffith and Innes Street; Hudson and Hawes Streets; and at the foot of Yosemite Avenue
- 1 south of Candlestick Point on the extension of Sunnydale Avenue

To collect and divert the sewage from these remaining outfalls, it will be necessary to construct one tunnel, five additional pumping stations, and numerous sewers and diversion structures. It will also be necessary to make certain improvements at the treatment plants. All of the necessary works have been located and preliminary estimates of cost have been made. With funds now available most of the projects can be designed and some of them can be built. The remainder should be financed in the immediate future by a bond issue or by some other means.

The accompanying map entitled 'Sewage Disposal Works' shows the treatment plants, pumping stations and collecting sewers that have been built since 1944, including those under construction on June 30, 1953. It also shows the additional works needed, with separate designations for those to be financed with present funds and those requiring new financing.

COST OF REMAINING WORK

On the basis of preliminary estimates, the cost of the remaining necessary sewage disposal works will be as follows:

To be financed with presently available funds:

Hunters Point Pumping Station and connecting sewers	\$ 230,000
Yosemite Pumping Station and connecting sewers . .	690,000
Plans for remaining collecting systems	185,000
Additions and betterments at sewage treatment plants	460,000
Outfalls sewers and other sewers appurtenant to treatment plants	150,000
Reconstruction of Fitzgerald Avenue pumping station	90,000

Sub-Total, work financed	\$1,805,000
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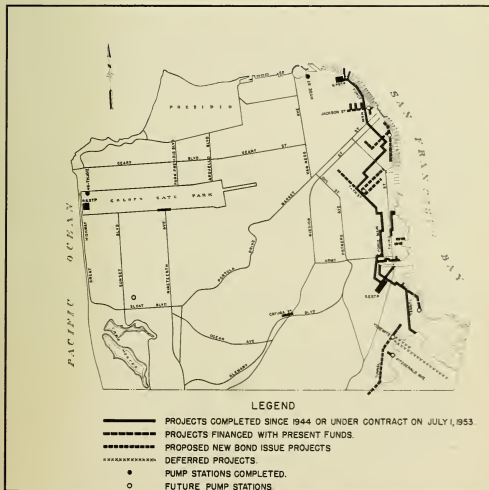
To be financed by new bond issue or other means:

Diversion structures interceptor sewers
and three pumping stations in North
Point District to divert flow from
existing outfalls to treatment plant \$ 4,580,000

Tunnel, diversion structures and inter-
ceptor sewers in Southeast District
to divert flow from existing outfalls
to treatment plant 1,950,000

Sub-Total, work to be financed \$ 6,530,000

Total Cost of Remaining Sewage Disposal Works \$ 8,335,000



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SEWAGE AND WASTE TREATMENT

GENERAL

The North Point and Richmond-Sunset Plants and the sludge treatment facilities at the Southeast Plant operated continuously during the fiscal year. The sewage treatment facilities at the Southeast Plant started operating on November 28, 1952. The plants are treating sewage from all parts of the City except limited areas along the Bay shore. The unserved areas will be connected to the plants upon completion of the additional collecting sewers and pumping stations now under construction or planned for the immediate future.

An Industrial Waste Section was formed in September, 1952 to enforce provisions of Ordinance 7425 'Regulating Discharge of Waters and Wastes into the Public Sewer System or Shore Waters' which became effective August 30, 1952. The ordinance gives quality limits for sewage or wastes which may be discharged into City sewers or shore waters and defines conditions for such discharge. An assistant Engineer was assigned as Industrial Waste Engineer to make field investigations, check complaints and violations, organize the work of the section and lay a foundation for future activities.

PERSONNEL

During the fiscal year the personnel in the Division of Sewage & Waste Treatment was increased from 94 to 102. Six additional Junior Operating Engineers were employed in November, 1952 for the sewage treatment facilities at the Southeast Plant. The following table shows the distribution of plant personnel as of June 30, 1953 exclusive of the Senior Engineer in charge of the Division and the Industrial Waste Engineer.

Classification	North Point	Richmond-Sunset	South-east
Superintendent	1	1	1
Chemist	1	1	1
Water Chemist	2	1	3
Clerk-Stenographer	1	1	1
Chief Operating Engineer	1	1	1
Operating Engineer	6	6	7
Jr. Operating Engineer	15	5	27
Janitor	1	-	1
Laborer	4	3	5
Truck Driver	1	1	-
	33	20	47

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Bacteriological work for the Division and for the individual plants, requiring one Water Chemist, is centralized at the North Point laboratory. Engineering design for improvements is performed by other divisions of the Bureau as required. Major repairs and maintenance requiring the services of specialized crafts are done by other City forces. The Recreation and Park Department provides landscape maintenance at the North Point and Richmond-Sunset Plants.

SEWAGE TREATMENT METHODS

Each plant provides primary treatment for removal of oil, grease, floating material, grit and settleable solids. The effluent is chlorinated for bacterial disinfection before being discharged into the ocean or bay. Sand and screenings from the North Point and Southeast Plants are hauled by truck to the garbage fill south of the county line. At the Richmond-Sunset Plant, screenings are incinerated and sand is hauled to a city dump.

The Richmond-Sunset Plant provides two-stage digestion, elutriation and vacuum filtration of the digested sludge. During the past year all filter cake was hauled to city parks for use as a soil conditioner. In the future this cake will be hauled to the Southeast Plant for final drying. Raw sludge collected at the North Point Plant is pumped to the Southeast Plant through a 10-inch diameter concrete-lined force main approximately six miles long. The sludge treatment facilities at the Southeast Plant provide for thickening of raw sludge, two-stage digestion, elutriation, vacuum filtration, flash drying and pelletizing of dried sludge. Dried sludge was delivered to the Recreation and Park Department for use in city parks from July 1, 1952 to January 6, 1953. A six-month contract for sale of the material was in effect from January 6, 1953 to July 6, 1953.

TREATMENT PLANT OPERATION

The following tabulation summarizes data on flows, materials removed, chemicals added and products handled and power and gas purchased for the three plants.

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SUMMARY OF TREATMENT PLANT OPERATION
Fiscal Year 1952-1953

	North Point	Richmond	Sunset	Southeast
Sewage Flow, million gallons				
Total	12855 (1)	4058		2765
Max day	76	23 (2)		30 (2)
Avg day	35.7	12.2		12.9
Screenings, cu ft				
Total	27287	7297		6343
Max day (3)	243	46		120
Per million gallons	2.12	1.80		2.89
Grit, cu ft				
Total	27550	104090		25610
Max day (3)	540	260		300
Per million gallons	2.2	25.6		9.3
Chlorination, lb (4)				
Pre	524450	120720		39870
Post	1000550	325730		94750
Process water (eff)	14500			8600
Total	1539500	446450		143220
Per million gallons (dry weather)	140	120		130
Sludge Solids, M lb (Dry)				
From sedimentation (5)	22607			6025
To Digesters		6376		25930
Filter Cake		2043		4807 (6)
Dried Sludge				3610 (6)
Ferric Chloride				
Total, lb		63000		175270
% used based on filter cake solids		3.08		3.65
Gas Production, M cu ft				
Total		47871		147540
Avg day		130		405
			Sewage	Sludge
Power and Gas Purchased				
Power, total M kwhr	4790.4	1657.6	1476.0	1664.0
Power, avg mo M kwhr	399.2	138.1	211.0	138.7
Natural Gas, Total, C cu ft	13554	12268		114450
Natural Gas, avg, C cu ft	1120	1020		9540
Hauling				
Trips, grit and screenings	555			329
Trips, grit and filter cake		1125		

NOTES

- (1) 5 mgd flow diverted from North Point to Southeast Plant starting November 28, 1952. Combined North Point and Southeast flows 5 mgd less after rainy season than North Point flow before diversion. Investigation by Bureau of Sewer Repair showed sewage by-passing the North Point trunk sewer directly to bay at several diversion structures. Steps now being taken to correct condition.

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- (2) Flow restricted during storms to avoid overloading sand handling equipment.
- (3) During storms.
- (4) North Point: pre-chlorination continuous, post chlorination nine months March to November. Richmond-Sunset: pre and post chlorination continuous except during rains. Southeast: pre and post chlorination continuous after April 9, 1953.
- (5) Pumped to Southeast Plant thickening tanks.
- (6) Production restricted by available storage capacity during alterations of handling equipment by Contractor and by limited hauling facilities.

Pelletizer operation discontinued after production of 286 tons of pelletized material because of excessive die wear. Manufacturer currently investigating problem.

IMPROVEMENTS AND STUDIES

During the year, steps taken to improve operation, studies undertaken and special functions assigned to the Division were:

Steps to improve operation

- Removal of hand cleaned bar racks
- Modification of grit handling facilities
- Relocation of sedimentation tank sludge airlifts
- Alteration of sedimentation tank scum skimmers
- Revision of sewage pumping schedules

Special Studies

- Lower cost materials suitable for air deodorization
- Points of application and dosage control of chlorination
- Pollution survey of Aquatic Park area in cooperation with Department of Public Health
- Methods for controlling dusting and increasing wetability of dried sludge

Assigned Functions

- Frequency of smog occurrence in San Francisco and related climatological factors
- Testing home garbage grinders for compliance with ordinance requirements

INDUSTRIAL WASTES

Beginning in September 1952, field investigations were made of 134 industries covering 15 basic types of industrial wastes and of locations and sources of sewage discharged into the bay at Yacht Harbor, Aquatic Park, Fisherman's Wharf and at various locations along the east shore. A special survey was made of the packing house area. Field investigations were limited generally to checking specific complaints and ordinance violations. Samples collected were analyzed by the treatment plant laboratories. Industries were fully informed of the pollution control objec-

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tives and every effort made to obtain their cooperation in making necessary changes in plant operations or facilities.

RESULTS OF OPERATION

A marked improvement in the condition of ocean and bay waters has been observed since sewage treatment was instituted. Along the ocean beach and at nearby north shore beaches the waters are safe for bathing at all times except during storm overflow. Operation of the North Point Plant has so reduced pollution along the north shore that the Department of Public Health has found it possible to remove the quarantine at Aquatic Park. At Islais Creek, odors of sewage origin have disappeared, bacteriological contamination has been greatly reduced, dissolved oxygen has been observed for the first time, and there are definite indications of increased fish life.

COST OF OPERATION

Total expenditure for the fiscal year was \$ 741,535.
The cost was distributed as follows:

Personal services	\$446,706
Heat, Light & Power	99,974
Contractual Services	70,963
Materials and Supplies	123,892

Based on a flow of 19,678 million gallons, cost of operation per million gallons treated was \$37.68.

Complete details of operation are given in a separate report which will be made available to persons interested.

STREET AND HIGHWAY IMPROVEMENTS - CITY FINANCED

During the 1952-1953 fiscal year, thirty-nine street and highway contracts were awarded at a total cost of \$3,265,587.56, an amount 19% in excess of the value of corresponding awards in the previous year. These contracts, ranging in magnitude from \$685.85 for a sidewalk in front of a school to \$477,201.97 for the removal of abandoned street car tracks on Folsom and several contiguous streets, accounted for the improvement of approximately 31.4 miles of city streets and highways. Gasoline taxes and bond proceeds provided the main sources of funds to finance these contracts. The contracts are those listed in Appendix I, Tables A, B-3 and B-4, and two contracts in Table E-2, namely Alpha Street-Tioga Avenue connection and Sloat Boulevard planting.

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SLOPE REVETMENT WORK UNDER WAY

NEW ROADWAY AND COMPLETED
REVETMENT WORK ON RIGHT

SAN JOSE AVENUE WIDENING

HIGHWAY IMPROVEMENT PROJECTS

Six contracts are classed as major highway improvements aggregating \$828,753.16. They are described briefly in the following paragraphs.

Stanley Drive Extension

This project is an additional unit in the second stage of a major channelization program designed to eliminate traffic conflicts at the crossing of Junipero Serra Boulevard and Alemany Boulevard. Construction of the Alemany Overcrossing in 1950 completed the first stage by providing a viaduct over Junipero Serra Boulevard for traffic southbound from Alemany Boulevard. The extension of Stanley Drive and the previously completed Stanley Drive Underpass comprise the second stage which will eliminate dangerous left turns from Junipero Serra Boulevard to Alemany Boulevard and to Stanley Drive. It will also provide a direct connection from Lake Merced Boulevard to Alemany Boulevard without interfering with the heavy traffic on Junipero Serra Boulevard. The third stage, to be undertaken by the State Division of Highways at a future date, will consist of a grade separation at the junction of Junipero Serra Boulevard with Alemany Boulevard Extension in San Mateo County just south of the city limits.

The Stanley Drive Extension, a four-lane divided highway, is being constructed in a broad right-of-way so that it may be developed as a parkway in conformity with the City's Master Plan. It is expected that the present contract will be completed in August, 1953 and that the landscaping will be undertaken within the next two or three years.

San Jose Avenue Widening

In December 1952 the final unit of the Army-San Jose-Guerrero project, started in 1935 to provide a six-lane divided highway between 'Bernal Cut' and the Bayshore Freeway, was completed. Since the portion of San Jose Avenue running through the cut with only a four-lane undivided roadway would obviously be unable to handle the anticipated increase in traffic volume, a contract was let for the construction of a new three-lane, southbound roadway on the westerly side of the cut and the conversion of the old pavement into a three-lane, northbound roadway. The project extended from Randall Street, the termination of the original project to Monterey Boulevard, a major traffic contributor. The contract was completed on May 1, 1953.

One of the main features of the work was the stabilization of the steep westerly cut-slope which had been subject to numerous small landslides over many years. After installing a series of tile-under-drains, 5,244 tons of quarry-run rock, varying in size from pea gravel to pieces weighing 300 pounds, were placed

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on benches cut in the slope. The rock, lying on a slope of about 1 to 1, acts like an inclined gravity retaining wall. To prevent the percolation of surface water which might lubricate the underlying earth, two inches of 'gunite', a mixture of cement and sand blown into place with pneumatic equipment, was placed over the entire surface of the rock slope. This treatment, which had been found to be quite effective in controlling a previous large slide in the cut, extends for a distance of about 830 feet and accounts for about 39 percent of the contract cost, or \$133,543.10. A wide dividing strip has been left between the old and new roadways which may be utilized in the future as right-of-way for a rapid-transit railway.

Laguna Honda Boulevard Widening

This project consists of widening Laguna Honda Boulevard between Dewey Boulevard and Clarendon Avenue from a two-lane street to a four-lane divided major thoroughfare. It also includes the construction of 'bus havens' at Forest Hill Station of the Municipal Railway so that transit buses may stop outside the travelled way when loading and discharging passengers. Pedestrian and bus-actuated signals will be provided for the control of traffic at this busy location. In order to undertake this work it was necessary to acquire, by transfer of jurisdiction, a strip of property approximately 1,140 feet long varying in width from 9 feet to 45 feet from the Laguna Honda Home, a small irregular piece of land from the Municipal Railway, and a large triangular piece of property from the Water Department. These Departments were most cooperative in expediting the transactions attendant to the transfer of property thereby enabling the work to be started at an early date. Although strike conditions prevailed at the start of the job, it is anticipated that construction will be completed in December 1953.

Channelization of Main Drive and Panhandle at Stanyan, Fell and Oak Streets.

For many years the bottle-neck at Stanyan Street where traffic from Fell Street enters Golden Gate Park has been a source of delay and danger to the many motorists who pass through it daily. On May 1, 1953, in anticipation of the plan to make Fell and Oak Streets companion one-way streets, a contract was awarded to break this bottle-neck. The work consists of constructing diagonal connections between the Main Drive of Golden Gate Park and Fell and Oak Streets, providing loops to eliminate left-hand turns, and installing traffic signals and safety lighting. The first fluorescent luminaires to be used for street lighting in San Francisco will be installed on this project.

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Twin Peaks Boulevard Widening - Contract No. 1

So that traffic expected to be generated by the opening of a large subdivision on the southwesterly slope of Twin Peaks might be handled expeditiously, the long proposed widening of Twin Peaks Boulevard was broken down into two sections and a contract for the first section was awarded on November 19, 1952. It provided for widening the existing two-lane road to four lanes between Portola Drive and the entrance of the new subdivision, a distance of approximately eight hundred feet. The work was completed on May 1, 1953. A contract for widening the remaining portion of Twin Peaks Boulevard will be let early in the 1953-1954 fiscal year.

Sloat Boulevard Planting

For the first time since the early 1930's, the Department entered into a contract for landscaping one of San Francisco's main boulevards. After much research and several consultations with the Recreation and Park Department staff and the staff of the Department of City Planning, plans were prepared and a contract was awarded for the landscaping of the wide center island of Sloat Boulevard. Several different types of trees and shrubs which thrive in our climate and a ground cover of ivy are to be planted. Loam had been placed and a sprinkling system installed under the Sloat Boulevard Widening contract completed last year. This work, with the approval of the State Division of Highways, is being financed mainly from State highway funds which accrued to the City prior to the adoption of the Collier-Burns Highway Act of 1947.

STREET IMPROVEMENTS

In addition to the highway improvements described above, twenty-two contracts were awarded for various types of street improvements amounting to \$575,410.60, a value greater than twice that of the nineteen contracts awarded during the previous two years combined. These contracts included initial street work in front of various pieces of City property, 9.81 miles of resurfacing work, and the complete reconstruction of 1.81 miles of old pavement on Clay Street and 24th Street.

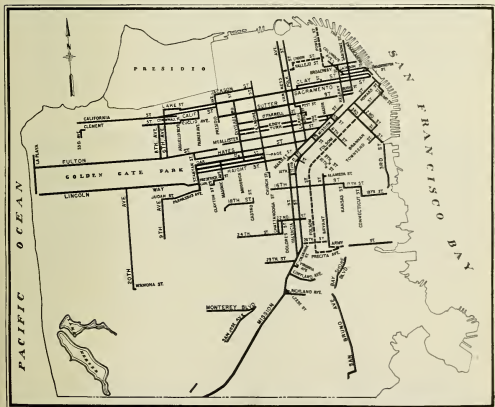
A deviation from normal procedure was resorted to in rehabilitating Potrero Avenue from 16th Street to Army Street. Originally included in the track removal program, this project was converted to a resurfacing project as the track area was found to be in exceptionally good condition. The rails were, therefore, left in place, their grooves were filled with thoroughly compacted asphaltic concrete and the entire roadway then resurfaced with two inches of asphaltic concrete wearing surface. With the anticipated diversion, in the near future, of a major portion of its traffic to Bay Shore Freeway, it is expected

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ted that Potrero Avenue will give satisfactory service for many years. It is estimated that approximately \$70,000 in the cost of construction was saved by leaving the tracks in place.

TRACK REMOVAL AND STREET RECONSTRUCTION

At the end of the year 80.30 miles of streets had been improved by the removal of abandoned tracks and rehabilitation of pavement, work was under way on 9.50 additional miles of streets, and only 14.65 miles of the original track removal program remained to be done. An accompanying map shows the track removal work completed or under way. Eleven contracts were awarded during the year for the improvement of a total length of 14.15 miles of streets at an aggregate cost of \$1,861,423.80. Contracts awarded as well as those under way during the year are listed in Table B-4 of Appendix I.



TRACK REMOVAL PROGRAM
to June 30, 1953

Solid lines - Work completed
Dash lines - Awarded

MAJOR HIGHWAY PROJECTS COMPLETED

A number of important highway projects, started in previous years, were completed during the year just past including the Broadway Tunnel, the Bryant Street Viaduct, the Golden Gate Park Cross-over Highway, Monterey Boulevard widening, Sloat Boulevard channelization, Phelan Avenue widening, Guerrero-San Jose reconstruction, and the Stanley Drive Underpass. They are listed in Table A of Appendix I and were described briefly in the previous Annual Report. Two of them deserve special comment.

Broadway Tunnel

The tunnel project in Broadway extending from Powell Street to Polk Street, a distance of 3300 feet was opened to traffic on December 21, 1952. It is now used by about 17,500 vehicles per day, with a maximum hourly flow of about 1300 vehicles in one direction. This conforms satisfactorily with a prediction made in 1946 based on an origin-destination survey (See p. 77 of Annual Report for the year ending June 30, 1946).

Excluding the approaches, the twin tunnels are 1616 feet long between portals. Each tunnel has a two-lane roadway and a pedestrian sidewalk. Interiors are lined with light yellow tile and lighting is provided by continuous lines of fluorescent tubes at the crown of the arch. Automatically controlled ventilating fans ensure fresh air at all times. Safety facilities include traffic control signals, telephones, and fire alarm boxes.

The tunnel was built by the Morrison-Knudsen Co. Inc. under contract with the City. Total construction time was 2 years and 8 months. Project costs were as follows:

Construction	\$6,138,553
Right-of-Way	911,385
Engineering	472,684
Total	\$7,522,622

Bryant Street Viaduct

The Bryant Street Viaduct, between Second Street and Beale Street, built at a cost of about \$275,000 was opened to traffic on May 1, 1953. The new structure and the adjoining street improvement provide a new artery for traffic from the industrial district to The Embarcadero. The total length of the improvement is 1060 feet. The structure, extending from First Street to Beale Street, a distance of 670 feet, is a reinforced concrete viaduct carried on concrete piers. The roadway has a grade of 6 percent and a width between curbs of 33 feet designed to carry

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EAST APPROACH AND PORTAL

INTERIOR VIEW
BROADWAY TUNNEL

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three lanes of traffic in one direction. Prior to completion of this improvement, Bryant Street came to a dead-end between First and Second Streets because of a 30-foot bluff.

PLANS FOR FUTURE WORK

Plans for a number of street and highway improvements have been completed or are nearing completion so that several will be under contract in the coming fiscal year. The more important ones are shown below, in the approximate order of priority, together with estimated costs:

Ellis Street	: Market-Divisadero	Track Removal	\$ 318,000
Turk Street	: Divisadero-Arguello)Track Removal	353,000
Balboa Street	: Arguello - 31st Ave		
Bryant Street	: 2nd - Division	Track Removal	50,000
Clement Street	: Park Presidio-32nd	Track Removal	166,000
Market Street	: Hattie - Douglass	Widen-Channelize	7,000
Clarendon Avenue	: Laguna Honda-Stanyan	Widen-Reconstruct	170,000
Geneva Avenue	: San Jose-Tara	Extension	63,000
Portola Drive	: Woodside - Corbett	Realign	215,000
11th Street	: Market-Division	Track Removal	105,000
Twin Peaks Blvd.	: Contract No. 2	Widen-Realign	87,000
Geneva Avenue	: Mission-Prague	Reconstruct	190,000
Waller Street	: Stanyan-Ashbury) Reconstruct	200,000
Ashbury Street	: Frederick-Clayton		
Clayton Street	: Ashbury-Market		
Skyline Boulevard:	Lake Merced- County Line	Widen-Realign	300,000
TOTAL			\$2,224,000

In addition to the above, final plans will be started for the Geary Expressway and a portion of Mission Freeway. A half million dollar program to reconstruct obsolescent brick and basalt block pavement will be undertaken about mid-year.

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STREET IMPROVEMENTS FINANCED BY PROPERTY OWNERS

All street construction financed in whole or in part by the fronting property owners for which permits were issued or contracts were awarded during the fiscal year ending June 30, 1952, and also those which were authorized but not completed in the previous fiscal year are listed in detail in Appendix I, Tables B-1 and B-2. Table B-1 covers street improvement projects performed under contracts negotiated directly between property owners and contractors, the City's only function being to grant the permits, furnish the plans, and inspect the construction work. Table B-2 lists similar street projects which were done under contract awarded by the City, the cost being assessed against the property owners. In some of these cases where assessed values were very low, City financial aid was extended to make an important project feasible.

Twenty-six permits for private contracts were issued covering work costing about \$365,000, which was about the same as during the previous year. The value of street improvements in new subdivisions was approximately \$233,000, or about 64 percent of all private work. Fifteen contracts were awarded for work done under assessment proceedings as compared to twenty-six in each of the three preceding years.

The following tabulations indicate the volume of work carried on during the year in connection with street improvement procedures under the San Francisco Street Improvement Ordinance of 1934.

ASSESSMENTS AND BONDS

Assessments issued for cost of street work	22
Cost of street improvements covered by assessments issued	\$162,355.67
Receipts for bond payments issued	68
Amount of bond payments collected	\$ 9,727.78

STREET WORK PROCEEDINGS

Resolutions of Intention passed.....	20
Street Improvement Projects recommended to the Board of Supervisors	18
Notices of Street Improvement posted.....	208
Notices of Resolution of Intention mailed	385
Ordinances ordering performance of street improvements passed	14
Proposals for street improvements published	16
Awards of Contract for street improvements	15
Notices of Recordation posted	191
Notices of Recordation mailed	363
Private contracts authorized by permit	26

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STREET DEDICATIONS AND CHANGES

Numerous actions taken by the City during the year with reference to subdivisions, street grades, sidewalk widths and street closings were based on investigations and recommendations of the Bureau of Engineering and in many cases involved preparation of specific descriptions by the Surveys and Mapping Division of the Bureau.

SUBDIVISION MAPS

The following tentative subdivision maps were received and reported on:

Restani Terrace, located northerly of the intersection of
Alemany Boulevard and Geneva Avenue
Perego Heights, located on the easterly slope of Twin Peaks.

Two subdivision maps were approved by the City Engineer and the Director of Public Works and filed in the Recorder's office as follows:

Lawton Heights
Lakeshore Country Club Acres

STREET OPENINGS

Maps were approved and recorded providing for the opening, widening and extension of streets, as follows:

Raleigh St.	Paulding St. SW'y	Opening
Moulton St.	Steiner St. E'y	Opening
Edgewood Ave.	San Miguel Rancho Line S'y	Widening
Alpha St.	Tioga Ave. to Wilde Ave.	Widening
Tioga St.	Alpha St. NW'y	Widening
Broadway	Larkin St. to Leavenworth St.	Widening
First	at Bryant St.	Widening
Athens St.	Valmar Terrace S'y	Reopening
Alemany Blvd. and	Sagamore St.	Widening
Ocean Ave.	Faxon Ave.	Widening
Esmeralda Ave.	Bradford St. to Peralta St.	Widening
Potrero Ave.	at Andrew St.	Widening
Army St.	Potrero Ave. to Guerrero St.	Widening

STREETS VACATED

The following streets were vacated between the limits noted:

Illinois Street	Ely 70 ft. bet. Eldorado & 18th Sts.
Fowler Ave.	Woodside Ave. to Portola Drive
Clipper St.	Homestead St. to 190' W. of Fountain St.
Homestead	Slv Termination to Clipper St.

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Hoffman	140' Nly of 26th St. to Clipper St. realignment
Trocadero Drive	Ely termination to Wawona St.
Vale Avenue	Crestlake Drive to Trocadero Drive
Trumbull St.	Davenport Lane to 89 ft. westerly
Chicago Way	Ptns. cul-de-sac at SE'ly termina- tion
Missouri St.	22nd St. to 23rd St.
Texas St.	22nd St. to 23rd St.
23rd St.	Missouri St. to Texas St.
Converse St.	NW'ly termination to 75' SE'ly
Lena Place	Illinois St. to 132' E'ly
Sunset Community Center	Streets within
Verdi Place	W'ly 79 feet
Casitas Avenue	S'ly side E'ly from Lansdale Avenue
Acme Alley & Blair St.	Grand View Ave. to Corwin St.
Mercury St.	W'ly ptn. Thornton Ave. to S'ly termination
Mississippi St.	22nd St. to 23rd St.
Paraiso Place	Crestlake Drive N'ly
Rockdale Drive	Omar Way to Bella Vista Way
Toland St.	Shafter Ave. to Elmira St.
13th Street	33.497 ft. W. of Harrison St.
Locksley Ave.	Ptn. in Lawton Heights
Marietta Drive	Opp. Arroyo Way
Thomas Ave.	Selby St. to 525 ft. S'ly
Conkling St.	Thomas Ave. to 150 ft. S'ly
Wattson Place	Ruth St. to Leo St.

STREET GRADE CHANGES

Official grades were changed on the following streets:

Dartmouth St.	Olmstead St. to Mansell St.
Peralta Ave.	Mayflower St. to Powhattan St.
Goettingen St.	Mansell St. to 310 ft. southerly
Mansell St.	Brussels St. to Somersset St.
Delta St.	Campbell Ave. to Teddy Ave.
Felton St.	Harvard St. to Gambier St.
Harvard St.	Felton St. to 150 feet southerly

STREET GRADES ESTABLISHED

New grades were established on the following streets:

Boutwell St.	Islais Creek Channel to Helena St.
Mangels Ave.	Congo St. to Detroit St.
Charter Oak Ave.	Helena St. to 685 ft. northerly

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SIDEWALK WIDTHS CHANGED

Changes in official sidewalk widths were ordered by the Board of Supervisors as follows:

Quint St.	Jerrold Ave. to LaSalle Ave.
Market St.	Ord St. to Danvers St.
Erie St.	Mission St. to 204 ft. easterly
Charter Oak Ave.	Helena St. to Industrial St.
Boutwell St.	Islais Creek Channel to Helena St.

STREET MILEAGES

Streets and highways in the City as of June 30, 1953 were classified as follows:

Class	Miles
State Highways	30.83
Major Streets	183.20
Other Improved Streets	589.44
Total Improved	803.47
Unimproved Streets	113.14
Total Dedicated	916.61

STREET AND SIDEWALK INSPECTION

A staff of six inspectors was employed during the year on supervision of street excavations, inspection of sidewalks, and reports and investigations in connection therewith. On the average, two inspectors were engaged continuously on sidewalk inspections. They worked in the following districts:

The Central 50 Vara District
Outer Richmond District
Outer Sunset District
Civic Center Area
Easterly Mission District
Sunnyside District
Excelsior District

In addition, many special sidewalk and driveway inspections were made in connection with the various track removal and pavement reconstruction contracts. The combined coverage of all sidewalk inspections totalled 35,248 lot frontages or about 14% of all lot frontages in the City.

Various street maintenance inspections and permit investigations were made by the remainder of the inspectors, the

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major types being utility excavations, tank installations, drive-ways, construction use of street space, pavement defects, house movings, blasting, and complaint and claims investigations. Activities are illustrated by the following summary:

Inspections, Notices and Investigations

Curb lowering inspections	1380
Notices to construct or repair sidewalks	4613
Notices to remove obstructions, oil, etc.	553
Notices to replace side sewer covers, including set-backs	911
Street Space inspections	2563
Sidewalk tank excavation inspections	257
House moving inspections	65
Defects in pavements reported	2320
Damaged signs reported	301
Excavation permits approved	13488
Excavation repaving inspected	3234
Notices of Improvements posted	469
State Encroachment Permits obtained	51
Claims investigations and inspections	539
Special investigations	1470
Personal and telephone inquiries answered	14271
Citations requested	9

DAMAGE CLAIMS

The Bureau investigated 229 damage claims based on street and sidewalk accidents, usually falls, which had been filed against the Department of Public Works during the fiscal year 1952-1953. Eighty-nine were found to be the responsibility of contractors, and twenty were based on operations of privately or publicly owned utilities. The remainder included 56 claims alleging defective pavements, 56 alleging defective sidewalks and eight claims due to falls at or near bus zones. Under present law, the claims would be the responsibility of the Department of Public Works, if negligence in making repairs could be shown. In each of these cases a full report was made for the City Attorney, accompanied by photographs when appropriate.

According to a report prepared by the Controller, the aggregate amount of claims filed during the fiscal year as a result of operations and facilities under the jurisdiction of the Department of Public Works was \$2,346,564.99. During the same period, 61 claims, aggregating \$765,065.72 were settled by the payment of \$80,186.06. The largest settlement was \$31,501.42 for the loss of a home and furnishings caused by a landslide below Castenada Avenue. Excluding this claim the total amount of settlements was 6.8% of the aggregate of the claims involved.

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TRAFFIC ENGINEERING

ADMINISTRATION

The responsibility for the design and management of the City's traffic control facilities continues to be divided between the Police Department and the Department of Public Works without any clear definition of their respective functions. The Police Department has a Bureau of Traffic Engineering and Administration which appears to be charged with engineering, education and enforcement. The Department of Public Works has a Bureau of Engineering which designs all new traffic facilities, supervises their construction and manages the installation of all signs, traffic striping and parking meters. The Department also furnishes the work crews for curb markings and traffic stripes.

Within the Bureau, the Traffic Engineering Division makes basic surveys and studies and prepares functional layouts for traffic signals and street and intersection channelization. The Electrical Section of the Division of Design prepares detailed plans for signal installations and the Division of Streets and Highways perfects the plans for channelization projects. All plans for new construction are submitted to the Police Department for approval.

TRAFFIC SIGNAL INSTALLATIONS

The 1952-1953 fiscal year saw the award of a large number of contracts for traffic signals and channelization aggregating nearly \$600,000 as listed in Table C of Appendix I. In addition, a number of signals and channelizations were incorporated in comprehensive street and highway contracts. Most unusual of the signal contracts were the Mission District System and a special equestrian installation at Seventh Avenue and Fulton Street.

The Mission District System from a design standpoint is perhaps the most intriguing. It is similar in operation on a much larger scale to the cycle offset selection system installed on Bayshore Boulevard during the year 1951-52 and described in the Annual Report for that year. By means of a device for counting traffic for six-minute periods, these systems automatically select the cycle and offset which will best serve the prevailing traffic condition. In contrast to the Bayshore Boulevard System, which controls only four intersections along the Boulevard, the Mission District System incorporates 41 signalized intersections in a grid system. It is designed to establish Guerrero Street and South Van Ness Avenue as the major north-south streets from 14th Street to Army Street, with signals located only at the even numbered streets such as 16th, 18th, 20th, etc. By thus encouraging traffic to use the even numbered streets in the east-west direction, favorable signal block spacing is obtained on the north-south streets thereby creating greater capacity on these streets.

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Two master sampling centers are located at 16th Street and South Van Ness Avenue and at 18th and Guerrero Streets so that, should a catastrophe or a mechanical failure cause one sampling location to fail to respond to traffic conditions, the other center will automatically take over. In event of failure of both sampling centers, the system will continue to operate as a series of isolated intersections. The system is designed to sample traffic and adjust cycles and offsets to accommodate traffic movements in both the north-south and east-west directions.

The intersection at Seventh and Fulton is unique in that the signals are designed for the protection of equestrians crossing heavy vehicular traffic on Fulton Street. The signals normally flash amber on the main street and flash red on the cross street. A push button is located approximately seven feet above the ground so as to be convenient for a horseman to reach. When this button is pressed, the signals go to red for Fulton Street and a special traffic light in the shape of a green horseshoe indicates to the equestrian that it is safe to cross. The design is also unique in that a riding master may hold the equestrian indication while his class crosses and still have sufficient time for himself after releasing the button.

CHANNELIZATION

Channelizations were generally incorporated in traffic signal contracts or in street and highway or track removal jobs. The most significant and complicated traffic signal and channelization projects completed in 1952-53 were at the intersection of San Jose Avenue, Diamond Street and Monterey Boulevard, the St. Francis Circle at Sloat Boulevard, and the intersection of Stanley Drive and Alemany Boulevard. These intersections were complicated because of unusual street patterns.

Bayshore Boulevard from Silver Avenue to Third Street was made the location of possibly the largest installation of raised pavement bars in the country. The layout simulated a 16-foot center island with left-turn havens and traffic islands at 4 intersections. Raised bars were used because of their cheapness and the fact that within two years of their placement it is anticipated they will be removed because of adjacent freeway construction. The contract price of \$5808 covered the installation of 4400 lin. ft. of bars over a distance of approximately 1.2 miles.

TRAFFIC SIGNS

In addition to the general traffic signing program, the use of a special San Francisco type of temporary traffic sign was expanded in the 1952-53 year. The Division of Traffic Engineering designs and paints these signs using black letters on a luminescent chartreuse cardboard. The sign, because of its striking color, receives very high observance by motorists and pedestrians

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BAY SHORE BLVD. - AT THIRD ST.

LOOKING NORTHERLY

August 1952

Showing Channelization Using Pavement Bars

alike but fades in the sunlight to white in about three weeks. This is not objectionable for the reason that the use of these signs is kept to a minimum and they are used only for temporary messages introducing some special change in traffic direction.

A special type of 'No Left Turn' sign was introduced on Third Street. This sign calls for 'No Left Turn 7:00 to 9:00 A.M. and 4:00 to 6:00 P.M.' at all intersections for the entire length of Third Street from 16th Street to Bayshore Boulevard. The cost of these porcelain enamel signs was much less than the installation of the clock-controlled neon type signs installed on Lombard Street as described in last year's report. Some doubt was raised as to the effectiveness of a permanent sign applying to only a small portion of the day. A trial installation was first made with one near-side sign facing each direction of traffic at all intersections. The installation was so obviously successful that it will become permanent after two additional signs are installed at each intersection to give both near-side and far-side indication for each direction of traffic.

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TRAFFIC SURVEYS

The fiscal year saw the introduction of a flow map of the city with provision made to periodically bring the traffic volumes map up to date by means of overlays. It is planned to issue a new complete traffic flow map each year and to issue overlays on a quarterly basis to show significant interim changes.

Traffic surveys included speed studies on Fulton Street, San Jose Avenue, Third Street, and Junipero Serra Boulevard, which resulted in the posting of special speed limit signs. The signs were well accepted by the motoring public and were welcomed by the adjoining neighborhoods.

One very elaborate traffic survey was made for City Attorney to assist him in preparing a suit to prevent the State Toll Bridge Authority from selling \$50,000,000 in bonds to be used for expanding the approach system to the San Francisco-Oakland Bridge. The traffic survey consisted of a speed and delay study in which 129 runs were made across the bay.

ONE-WAY STREETS

Harrison Street westbound and Bryant Street eastbound were part of the initial over-all one-way program but installation had been postponed because of the costly conversion of the trolley coach overhead on Bryant Street. The Municipal Railway later found it possible to advance the effective date when it substituted gas coaches on this street because of a major sewer project in the Mission District. The earlier conversion of these streets to one-way operation on June 1, 1953 was well received by all motorists and by the trucking industry in particular. Since Harrison and Bryant Streets serve not only the warehouse area but are also the main approaches to the Bay Bridge, much congestion and delay was reduced when they went to one-way operation.

Studies were started leading to the development of a plan for making Third and Kearny Streets one way northbound and Stockton and Fourth Streets one way southbound. Many conferences were held with Municipal Railway officials whose problems were the most difficult to solve. The study has not been concluded, however, because of the imminent decision as to the final plans for opening Fourth Street across the Southern Pacific tracks between Townsend to Berry Streets.

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TRAFFIC FACILITIES AND IMPROVEMENTS

	Completed 1952-53	Approx. Cost 1952-53	Number In Place 6-30-53
SIGNALIZED INTERSECTIONS			
Wiley type signals removed	9*		130
3-Light signals installed	33		332
Net Increase	24		462
Equipped with pedestrian signals	13		77
Actuated Signals added	18		65
Cost - All work		\$251,000.	
*Wiley signal removed and not replaced			
TRAFFIC SIGNS			
Parking signs installed	338		
Other signs installed	851		
Other signs replaced	150		
Total	1339		
Stop-signs added	103		
Stop-signs replaced	65		
Total Cost		16,042	
In addition, Calif. State Auto Assn. spent \$17,000 for labor			
STREET NAME SIGNS			
Old type replaced by new	575		
New Installations	350	18,900	6892
Signs repaired	750	15,000	
Total Cost		23,900	
PARKING METERS			
New installations	845	42,250	11,528
Maintenance changes	406	3,045	
Relocations	29	225	
Total Cost		45,520	
TRAFFIC PAVEMENT PAINTING			
Standard Striping, Miles	438	40,648	
12-inch stripes, Miles	83	75,130	
Pavement Words	7,782	4,510	
Bus Zones	1,277	10,815	
Parking Meter Stalls	5,685	6,137	
Total Cost		137,240	
New School intersections	25		588*
*Incorrectly reported 6-30-52			
CHANNELIZED INTERSECTIONS			
Concrete islands	33		
Raised Pavement Bar Islands	2		
Total	35		
DIVIDED ROADWAYS			
Concrete center islands, miles	6.6		
Raised pavement bar island, miles	1.2		
Painted island only	2.2		

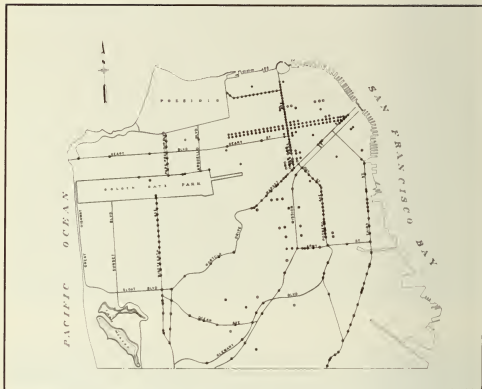
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VAN NESS AVE. AT BROADWAY
Looking North - Before Channelization



VAN NESS AVE. AT BROADWAY
Looking North
After Permanent Channelization
May 1953



THREE LIGHT TRAFFIC SIGNAL INSTALLATIONS

Open Circles - Completed 1952-53

Solid Circles - Completed previously



SAN JOSE AVE WIDENING

Channelization at Randall Street

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SURVEYS AND MAPPING

Seven survey field parties and an office force of six persons including the Engineer in Charge, performed the duties assigned to this Division in the past fiscal year. Construction points and checking on lateral and horizontal movement in the Broadway Tunnel employed a party for four months. Track Removal and Pavement Reconstruction required the services of a party for ten months, and the Precise Level Party was engaged for six months checking subsidence in the Fifty and Hundred Vara Districts. Other parties made various land and construction surveys. Survey lines run are segregated by type of survey as follows:

Type of Survey	Miles
Lots	3.2
Sewers	13.0
Cross Sections	64.8
Subsidence	22.5
Monument lines, including monuments set	0.4
Topography	28.1
New Streets	3.7
Line and Grade for Curbs and Paving	41.6
Track Removal	29.0
Reference Survey Cuts	7.9
Total length of surveys run	214.2 Miles

NUMBER OF SURVEYS

A total of 296 surveys were undertaken for the Department of Public Works and other City departments, classified as follows:

Public Improvement Surveys

Public and private contracts	104	
City Pay contracts	192	296

Lot Surveys

For Recreation and Park Department	6	
For City Architect	9	
For School Department	1	16
Total number of surveys		312

Survey fees received during the year amounted \$9,765.00.

PRECISE LEVEL SURVEYS

The precise level party had the opportunity this year to test the benches previously set in the Fifty and Hundred Vara Districts, for the purpose of determining the rates of subsidence

Bureau of Engineering

in these areas. Six miles of levels were run in the Fifty Vara District and seven miles in the Hundred Vara District.

Precise levels to set new bench marks or to replace those disturbed by track removal and street reconstruction were run where required throughout the City. The number of miles of levels run was 33 miles, and the number of precise bench marks was 2,051.

OFFICE WORK

Sixteen maps of school sites, playgrounds, parking lots, a library and a voting machine warehouse were prepared showing precise boundaries, locations of improvements, utilities and contours at five foot intervals.

Computations, preliminary drawings and deed descriptions for the acquisition of property were made on projects such as the widenings of Thirteenth Street, Laurel Street, Broadway over the Tunnel and Clarendon Avenue; the improvement of Corwin Street, the Southeast Collecting Sewers Tunnels and Child Centers at Hunters Point.

All tentative subdivision maps submitted were examined and checked for correctness of street widths and grades. Final subdivision maps submitted for filing in the Public Records were checked for correctness of lot line dimensions and exterior boundaries.

Forty requests from the City Attorney's office to determine the City's interest in property involved and to check the boundary description in actions to quiet title were reported on.

Appeals from decisions of the City Planning Commission require the signatures of at least twenty percent of the owners within a radius of 300 feet of the property involved, according to Section 117 of the City Charter. Eight such appeals were checked and reports made to the Clerk of the Board of Supervisors.

POST-WAR STATE AID

Under the two State Aid Acts providing financial assistance to local communities for the planning and building of public works, one additional application was filed and substantial reimbursements were received.

The following tabulation shows for each act the allocation for various purposes to the Department of Public Works, the payments received to date and the balance due.

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SUMMARY OF STATE ASSISTANCE

Act and Purpose	Allocation	Receipts	Balance
Planning Assistance Act			
For Plans	\$ 547,502.90	\$ 545,852.90	\$ 1,650.00
For Land	249,621.72	249,621.72	
Total Planning	\$ 797,124.62	\$ 795,474.62	\$ 1,650.00
Construction and Employment Act			
For Highways	\$ 398,383.79	\$ 398,383.79	
For Other Projects	7,959,078.97	7,959,078.97	
Total Construction	\$8,357,462.76	\$8,357,462.76	
Total - Both Acts	\$9,154,587.38	\$9,152,937.38	\$ 1,650.00

Payments received from the State during the past year were as follows:

Payments Received 1952-53

Date	Project	Amount
August 22, 1952	Army, Guerrero, San Jose (Land)	\$ 121,497.09
March 9, 1953	13th Street Widening (Land)	3,650.28
Nov. 25, 1952	North Point Plant (Constr.)	605,377.04
August 7, 1952	Sludge Treatment Plant (Constr.)	500.00
July 3, 1953	N.P. Influent and Effluent (Constr.)	500.00
Total		\$ 731,524.41

LABORATORY AND TESTING

The testing laboratory was operated as a unit of the Division of Construction to check the quality of materials used on construction projects and to control the asphalt and concrete mixes used in pavements and structures. In addition many routine tests were made for the Purchaser of Supplies, the Bureau of Architecture, the Public Utilities Commission, the Fire Department and the Recreation and Park Department.

CONCRETE

All concrete test cylinders continued to test well above specifications at 28 days. The use of two pounds of Calcium Chloride per sack of cement to accelerate the setting was continued in Class 'E' concrete mixes for the replacement of pavements in track removal jobs. This permitted traffic to move over the slabs the next day after pouring.

On the Folsom Street track removal job the concrete was dry batched at the plant and mixed on the site, then immediately dumped and spread on the sub-grade. It was noted that a considerable number of surface shrinkage cracks developed soon after setting. By placing and spreading the concrete so soon after the addition of water, the heat and expansion due to chemical reaction takes place in the poured slab, which then cools rapidly while the concrete is still green and has not developed sufficient strength to withstand the strain caused by the resulting shrinkage. With transit-mixed concrete of proper slump, these cracks do not seem to develop as readily, probably due to the dissipation of heat in transit which results in cooler concrete with a slower shrinkage rate.

ASPHALT

In the past year the quality of the asphalt sand from Antioch continued to be a problem. This sand contains an excessive amount of dust passing the 200-mesh sieve and is erratic in grading, making it difficult to control asphalt content accurately. A few carloads delivered to the Municipal Asphalt Plant tested as high as 60 percent through the 200-mesh sieve and were returned to the vendor. The excessive amount of fines is caused by the silt left behind by the receding flood waters of recent winters.

The Kaiser Sand Company has recently replaced their original manufactured sand, which carried an excessive amount of dust, with a new 'sand equivalent' type which is much coarser and has a much lower dust content. This sand when mixed with broken stone or crushed rock yields a very stable, open-type mix with a minimum amount of asphalt. It runs freely from bunkers, has the sharpness of crushed sand and the workability of river sand. Several contractors are using this sand on local streets at the present time. It was used on the following city contracts: Potrero Avenue from 18th Street to Army Street; Clement Street from Arguello to Funston; and Eighth Avenue from Clement to Fulton.

SUMMARY OF TESTS PERFORMED

A summary of the number and kind of tests performed in the laboratory during the year for various agencies, together with corresponding figures for the preceding year, are shown in the following table.

Bureau of Engineering

Laboratory Tests

Chemical and Physical Tests	1951-52	1952-53
Public Utilities Commission	28	35
Dept. of Public Works	208	105
Purchaser of Supplies	105	150
S.F. Fire Dept	60	30
Recreation & Park Dept.	16	20
Bureau of Architecture	250	320
Bureau of Engineering	45 712	150 810

Paint Tests

Recreation & Park Dept.	6	4
Purchaser of Supplies	45	40
Bureau of Architecture	35	30
Public Utilities Commission	8	10
Bureau of Engineering	10 104	10 94

Asphalt & Coal Tar Tests

Corporation Trenches	30	20
Public Utilities Commission	19	24
Recreation & Park Commission	8	3
Dept. of Public Works	160	100
Bureau of Engineering	200 417	180 327

Concrete Tests

Bureau of Building Insp.	4	2
Recreation & Park Dept.	32	26
Bureau of Architecture	484	920
Public Utilities Commission	105	62
Bureau of Engineering	1048 1673	570 1580
TOTALS	2906	2807

SERVICES PERFORMED
FOR OTHER BUREAUS AND DEPARTMENTS

The Bureau of Engineering supplied technical services requested by several bureaus of the Department of Public Works and by other departments of the City as summarized below.

FOR BUREAU OF ARCHITECTURE

Contracts Prepared and Supervised:

George Washington High School - Installation of intercepting drainage system in yard area (Specification No. 21,078).
Youth Guidance Center - Repair of slopes and construction of curbs, gutters and drainage system (Specification No. 21,062)

Plans and Cost Estimates furnished:

Samuel Gompers School - New door opening
Cabrillo School - Retaining Walls to enlarge yard area

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Mission High School - Ventilation and plumbing for cafeteria
 Portola Junior High School - New boiler and appurtenances
 John Swett School - Heat, ventilation and plumbing
 Commerce High School - Electrical and mechanical work for conversion to school administrative use
 Polytechnic High School - New lighting system for vice principals' offices, and electrical and power systems for modernization of Home Economics Room.
 Steinhart Aquarium - New structural supports for main floor of building
 San Francisco Hospital - New boiler and appurtenances
 Strengthening of roof of Ward Building No. 2 and alterations of the amphi-theatre in the west surgical suite
 Laguna Honda Home - New boiler system including piping and structural changes. Also installation of new, modern dishwashing equipment
 Fire Houses - Strengthening of roof and hose towers at fire houses No. 42 and No. 43
 Central Fire Alarm Station - Alterations of ventilation system
 Topographic and boundary surveys of sites for six schools, the Marina Branch Library, the San Francisco City College and the Voting Machine Warehouse

FOR BUREAU OF STREET REPAIR

New Municipal Asphalt Plant - Plans and Cost Estimates (Specification No. 21,140)

FOR BUREAU OF SEWER REPAIR

Laboratory analysis of seepage water and advisory service on gas survey

FOR PUBLIC WORKS MAINTENANCE YARD

Plans for heating and plumbing changes
 Contract prepared and supervised for additional improvements (Specification No. 21,043)

FOR RECREATION AND PARK DEPARTMENT

Contract Prepared and Supervised for additional improvements at Phelan Beach Recreation Area (Specification No. 21,060)
 New diversion structure at 20th Avenue and Lincoln Way to control flow to park sewage treatment plant (Specification No. 21,107)
 Advisory service on operation of sewage treatment plant in Golden Gate Park
 Topographic and boundary surveys of Laurel Hill, Junipero Serra Boulevard, Duboce Park, Corona Heights Playgrounds and the Phelan Beach Recreation Area

FOR DEPARTMENT OF PUBLIC HEALTH

Advisory service on operation of sewage treatment plant at Hassler Health Farm in San Mateo County

FOR BOARD OF EDUCATION

Topographic and boundary surveys of Hunter's Point Child Care Centers

FOR FIRE DEPARTMENT

Electrolysis survey of High Pressure Water Mains

Bureau of Engineering

FOR POLICE DEPARTMENT

Assigned one engineer, one draftsman and one stenographer
to assist Police Traffic Bureau

FOR CITY ATTORNEY

Report on status of all damage claims and suits
Survey and report on Bay bridge congestion

FOR SHERIFF'S DEPARTMENT

Inspections and tests at regular intervals for control of
operation of sewage treatment plant at County Jail No.
2 in San Mateo County

FOR SEALER OF WEIGHTS AND MEASURES

Studies and estimates for Meter Calibration and Testing
Station

FOR PARKING AUTHORITY

Review of Plans and Contract for St. Mary's Square Garage
Contract prepared and supervised for Mission-Bartlett
Parking Plaza (Specification No. 21,095)

FOR STATE DIVISION OF HIGHWAYS

Plans for relocation of High Pressure Fire System lines
along Bayshore Freeway route between Third and Eighth
Streets

FOR JOINT HIGHWAY DISTRICT NO. 10

Plans for channelization near Hickey Boulevard
Plans for resurfacing of Junipero Serra Boulevard
Estimates of cost of completing project

LABORATORY TESTS AND EXAMINATIONS

Made for Bureaus and Departments as follows:	
Bureau of Architecture	1280
Other Bureaus of the Department	227
Recreation and Park Department	53
Public Utilities Commission	131
Purchaser of Supplies	190
Fire Department	30

Total	1911
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GARBAGE DISPOSAL

Since 1932, all garbage and refuse collected in San Francisco, except limited amounts of hotel and restaurant wastes sold to hog raisers, have been disposed of by the sanitary fill method. Two licensed scavenger companies make the collections and haul to the dump and a jointly financed company operates the sanitary fill. The City's only functions are to control collection rates and enforce public health regulations.

COLLECTION AND TRANSPORTATION

All garbage and refuse is picked up at back doors

in the residential districts once or twice a week by the private scavenger companies. In the downtown districts, where large amounts of paper and garbage accumulate, general collections are made three times a week. At the larger hotels collections are made daily. No segregation is required on the part of the householder, but some salvaging is done by the collectors enroute and at a sorting shed near the disposal site. Paper, bottles, rags, metals, etc., are removed before weighing the amount of garbage hauled to the dump.

The amount of paper salvaged in 1952 was around 63 tons daily, this being only about 84% of the amount salvaged in the preceding year. Paper is hauled in about 26 flatbed trucks, some of which go directly to fiberboard factories and other users of waste paper. Surpluses not readily saleable are hauled to the dump and either burned or placed in the fill.

The two scavenging companies now use 146 trucks and average about 270 trips per day. Each truck has a capacity of about 20 cubic yards but after the removal of salvaged materials the load carried to the fill averages about 18 cubic yards. Total daily collections averaged 875 tons in 1952. The scavenger companies operate six days a week or about 312 days a year. Saturday collections are slightly above 60% of normal week day collections.

SANITARY FILL

The disposal site is located on a tide flat on the shore of San Francisco Bay just south of the City's southerly boundary. The property is owned by the Southern Pacific Company and adjoins the company's Bayshore switching yards for a distance of about 6400 feet. Quarries for cover material are located conveniently near the north and south ends of the fill site.

The present fill is 4800 feet long, measured along the original shore line and varies in width from 1200 to 1500 feet. The finished surface of the fill had an area of 149 acres in June 1953 and is fairly smooth and free from depressions. The elevation varies from 20 feet to 26 feet above mean sea level. Three test borings made by the State Division of Highways through the fill show that the depth of garbage varies from 33 to 42 feet and is underlain by a deep plastic clay formation. The limited information furnished by these test holes indicates that the fill has settled as much as 6 feet into the underlying mud. About 36 acres of the oldest part of the fill are now covered by commercial and light industrial buildings and storage yards.

FILL AND COVER OPERATIONS

The Sanitary Fill Company, which is controlled by the two scavenger companies, handles the fill and cover operation at the fill site through Easley and Brassy, Contractors. The collection trucks dump the garbage at the margin of the fill and

Bureau of Engineering

a large bulldozer compacts and levels it in layers 4 to 6 feet thick. Earth and rock is brought in from the quarry and spread over the garbage in 1½ ft. to 2 ft. layers at the end of the day. Additional layers are placed and covered after several weeks or months of settlement. The contractor uses three to four 7-yard dump trucks and a 1½-yard power shovel in the quarries and two D-8 Caterpillar bulldozers with 14 ft. blades on the dump.

Of the 300 acres leased by the Sanitary Fill Company from the Southern Pacific Company about 150 acres are still available for future fill. The pit and quarry land now owned by the company is sufficient to furnish cover material for many years to come. Operations have recently been hampered by the proximity of a temporary war housing project on land leased by the company to the Federal Government.

STATISTICS

The quantities and costs, which appear in the following tabulation on a calendar year basis, are based on information furnished by Easley and Brassy. They do not include administrative and overhead expenses of the Sanitary Fill Company, which employs the contractor. The Sanitary Fill Company is permitted by franchise to collect 90 cents per ton from the scavenger companies.

Bureau of Engineering

SANITARY FILL AND COVER REFUSE DISPOSAL STATISTICS

Calendar Years 1951 & 1952

	1951	1952
Total Income	\$236,579.87	\$245,676.11
Expenses		
Operations	\$194,573.21	\$196,564.14
Roads and Maintenance	4,811.07	6,306.03
Administration and Inspection	49,059.15	50,891.65
Total Expense	\$248,443.43	\$253,761.82
Garbage and Refuse Handled		
City of San Francisco, tons	262,544.92	271,258.16
Other Sources, tons	643.20	1,715.29
Total tons	263,188.12	272,973.45
Quantity per day, Tons (312 days)	844	875
Cost of disposal per ton	\$ 0.945	\$ 0.930
Cover Material		
Quantity Used, Cu. Yds	192,210	165,240
Cost, Total	\$101,096.80	\$104,327.29
Cost, per Cu. Yd.	\$ 0.527	\$ 0.632
Cover per ton of Garbage and Refuse, Cu. Yds.	0.731	0.606
Truckloads of Garbage and Refuse	77,713	83,669
Average Weight Per Load, Tons	3.39	3.26
Estimated Average Weight of Garbage per cubic yard, lbs.	377	362

Bureau of Engineering

ADMINISTRATION OF THE BUREAU

ORGANIZATION

The present plan of organization is shown on the chart at the beginning of the report of the bureau. It will be noted that there are two staff divisions and six line divisions under the direction of the City Engineer who heads the Bureau and reports to the Director of the department. The Assistant City Engineer assists in general supervision and also acts as head of the Division of Streets and Highways.

The organization plan is the same as last year except for a rearrangement and expansion of sections within the Division of Design. The former Sewage Disposal and Mechanical Section was divided into two separate sections. Two new sections were organized designated the Hydraulics Section and the Underground Structures and Cost Estimate Section.

FUNCTIONS OF DIVISIONS AND SECTIONS

The principal functions of the various divisions and sections are listed below, together with the name of the person who was in charge on June 30, 1953.

DIVISION OF STREETS AND HIGHWAYS - C.J. Geertz, Ass't City Eng'r.

Street Improvement Section	M.H. Levy, Engineer
Improvement Plans Unit	C.C. Clifton, Ass't. Eng'r.
Permits for original street improvements	
Plans and procedures for street improvement and maintenance and sidewalk changes	
Assessment Unit	L.C. Whaley, Ass't. Eng'r.
Proceedings for street improvements and assessment of benefits	
Spur track permits	
Reports on franchises and permits	
Permit and Inspection Unit	C.S. Hiden, Ass't. Eng'r.
Inspection of condition and use of streets and sidewalks	
Notification of parties responsible for repairs or adjustments	
Recommendations on various permit applications	
Permits for street excavations and inspection work	
Investigation of claims for damages due to condition of streets and sidewalks	

Bureau of Engineering

Highway Section N.F. Newman, Engineer
 Design of major thoroughfares
 Control of building permits on future
 rights of way

Track Removal Section E.J. Sierra, Engineer
 Plans and specifications for removal of
 abandoned street car tracks and
 reconstruction of streets

Plan and Record Section H.L. Reinfeld, Engineer
 Line and grade diagrams for street and
 sewer work performed under private
 contract and assessment proceedings
 Records of completed street work and
 sewer installations

DIVISION OF DESIGN R.H. Owens, Senior Engineer

Administrative Section G. Galli, Engineer
 Planning and coordination of work of
 Division
 Supervision of change orders on
 contract work
 Supervision of reference files for
 Bureau

Structural Section N.F. Yde, Engineer
 Structural plans and specifications for
 all major projects
 Records of surface and ground water con-
 ditions and plans for stabilizing
 slide areas
 Inspection and reports on City-owned
 structures in streets

Sewer Section R.F. Lauenstein, Engineer
 Plans and specifications for the
 extension and reconstruction of
 sewers and records of sewer system
 Investigation and recommendations on
 operation and maintenance
 Review of plans for sewer systems in
 new subdivisions

Sewage Disposal Section A.O. Friedland, Asst. Engineer
 Plans and specifications for sewage
 disposal plants, sewage pumping
 stations and collecting sewers
 Plans for, and records of, the
 Auxiliary Water Supply System

Bureau of Engineering

Mechanical Section R.D. Keeley, Asst. Engineer
Plans and specifications for mechanical work on sewage plants, pumping stations and steam boiler installations.

Electrical Section Ivan Sandberg, Engineer
Plans and specifications for electrical work on traffic signals, street lighting and sewage plants and pumping stations
Assists in field inspection of electrical construction

Underground Structures Section W.R. Daly, Sr. Draftsman
Records of underground structures and foundation conditions
Maps showing existing underground utilities in the vicinity of contemplated improvements
Review of utility locations in new subdivisions

Hydraulics Section G.T. Jeong, Engineer
Basic hydraulic studies and recommendations for sewer and drainage projects as needed by the other Sections
Analysis of rainfall data
Determination of co-efficients for sewer and drainage formulae

Specifications and Estimates Section S.C. Gerughty, Engineer
Review, editing and compilation of contract plans and specifications
Preparing contract cost estimates
Revision of standard specifications

DIVISION OF TRAFFIC ENGINEERING

Ross T. Shoaf, Engineer

Operation Section William Marconi, Asst. Engr.
Changes in existing traffic control devices
Investigation of public requests and complaints
Coordination with Construction Division and Municipal Railway
Analysis of Accident Records

Design Section James W. Challis, Asst. Engr.
Functional design of traffic signals and channelization
Reports on offstreet parking and long range traffic planning
Conducting traffic counts, speed-and-delay studies and other traffic surveys
Review of subdivision plans

Bureau of Engineering

Maintenance Section Charles M. Lang, Asst. Engr.

Installation and maintenance of traffic
striping, parking meters, street
signs and traffic signs

Specifications for traffic control for
major construction projects

Purchase and work orders and maintenance
of records and files

Reports of damages to city property caused
by traffic accidents

Coordination with Police Department J.L. Slater, Engineer

SURVEYS AND MAPPING DIVISION E.J. Cullen, Engineer

Field surveys for the department and
occasionally for other departments
and private parties

Investigations and reports on property
acquisition, street openings and
closings, and streets in new
subdivisions

Maintenance of official City maps and
records regarding streets

CONSTRUCTION DIVISION John D. Roberts, Sr. Engineer

Field Engineering Unit

Supervision and inspection of contract
work including layout and final reports

Inspection of sanitary fill

Testing Laboratory Unit P.F. Bernard, Engineering Chemist

Physical and mechanical tests of materials
used by Department of Public Works and
for several other departments

DIVISION OF SEWAGE AND WASTE TREATMENT B. Benas, Sr. Engineer

Operation and maintenance of treatment plants

Studies and recommendations for improvements

Surveys of shore conditions and industrial wastes

CONTRACT ADMINISTRATION DIVISION John Fiacson, Engineer

Contract administration and control,
including progress payments and
recommendation of acceptance

OFFICE MANAGEMENT DIVISION Wesley J. McKee, Head Clerk

Administrative work of the Bureau, including
budgets, personnel, payroll and office
services

Bureau of Engineering

PERSONNEL

The Bureau of Engineering had a staff of 333 employes on June 30, 1953. Approximately half of these were carried on payrolls charged against General Tax budgets for general engineering and sewage treatment plant operation. The remaining 171 employes were charged against project funds for various improvements. Exclusive of plant operating personnel, the number of persons now employed is 27 less than were employed three years ago when the Bureau was engaged in the preparation of extensive plans for the new sewage treatment plants.

Personnel at Beginning and End of Fiscal Year

Division	July 1, 1952	June 30, 1953	Increase
Design and Administrative Divisions	122	126	4
Construction Division (Field)	49	46	-3
Survey Division, Field and Office	35	34	-1
Clerical Staff	27	25	-2
Plant Operation force	94	102	8
TOTALS	327	333	6

It will be noted from the above tabulation that the increase in force during the year was caused by the final expansion of the Plant Operation force, which took place in November 1952.

PAYROLL

The following tabulation lists the sources of funds for payment of salaries and shows as of June 30, 1953 the number of employes charged to each and the corresponding annual payroll.

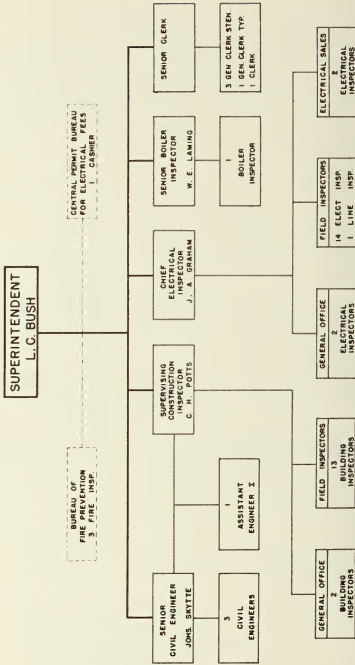
	Employees End of Year	Annual Payroll
General Fund (Budget Payroll)		
General Engineering	60	\$ 337,497.00
Treatment Plant Operation	102	366,439.79
Total Budget Payroll		\$ 703,936.79
Project Funds - Gas Tax, Bonds, Etc. (Inter-departmental payroll)	171	888,867.61
TOTALS	333	\$ 1,592,804.40

RETIREMENTS AND DEATHS

The Bureau lost the services of the following valued employes during the year:

V. Bogvad Christensen	Retired 3-1-53	Asst. Engineer 27 years
Philip Williams	" 11-1-52	Surv.Fld.Asst. 43 "
Mrs. Pearl H. Condon	" 10-1-52	Stenographer 9 "
Gunnar Spillum	Died 9-20-52	Jr. Engineer 13 mos.
Sidney W. Wicklund	" 1-18-53	Oper. Engineer 14 yrs.

ORGANIZATION CHART BUREAU OF BUILDING INSPECTION



APPROVED:

Lester C. Bush

LESTER C. BUSH, SUPERINTENDENT
BUREAU OF BUILDING INSPECTION

FIRE INSPECTORS ASSIGNED TO THIS
BUREAU BY THE FIRE DEPARTMENT
TO CHECK ALL PLANS FOR
COMPLIANCE WITH FIRE CODES AND
TO REPORT TO SUPERINTENDENT
ON ALL NONCONFORMITIES WITH
BUILDING CODES.

FUNCTIONS

For the purpose of ensuring compliance with City ordinances, the Bureau of Building Inspection reviews plans and inspects construction and installations involving structural, electrical and mechanical work throughout the City. It also studies and reports on legislation affecting buildings and structures and proposes new legislation as required.

BUILDINGS

The Bureau consults with architects, engineers, contractors and home owners in the preliminary stages of the preparation of their plans whether for new buildings or for alterations to existing buildings. It studies and reports on legislation affecting building matters and proposes new legislation as required.

The Bureau examines and reports on all applications for permits submitted to the Department of Public Works for new buildings, alterations to existing buildings, billboards and signs (electric and non-electric); inspects all this work as it progresses; makes a final inspection of new buildings or where a change of occupancy classification occurs, and issues Certificates of Final Completion when the work is finished.

Four 'called inspections' on buildings under construction are made at the following times:

- a. Foundations or other concrete forms must be inspected and approved before concrete is poured.
- b. Inspection before interior lathing. This is to see that all bracing, framing and firestops are installed.
- c. Inspection before exterior or structural plaster is in place.
- d. Final inspection prior to occupancy.

ELECTRICAL WORK

The Bureau regulates and supervises the installation of interior electric wiring of commercial, industrial and residential buildings and insures by frequent and adequate inspection that the standards provided for in City Ordinances, State and National Codes are maintained. Closely tied in with the inspection of interior wiring of buildings are other activities of the Bureau made necessary by the provisions of electrical ordinances affecting other City departments, and which entail cooperation with the Fire Prevention Bureau, Police Department, Health Department, and with the Division of Industrial Safety of the State of California. Some of these activities are summarized in the following paragraphs.

Bureau of Building Inspection

Reports of fire presumably caused by defective electrical installations and all places reported to be of potential electrical hazard are also checked by the electrical inspectors.

Coin operated amusement devices with electrical controls are licensed by the Police Department and, before issuance of permit, are required to meet the approval of the electrical inspector.

Night clubs and places of public assembly are licensed through the Health Department and, before a permit to operate is granted, the requirements of this Bureau in regard to adequate lighting and emergency must be complied with.

A copy of all complaints and violations of the Electrical Safety Orders of the State of California issued to property owners is filed with this Bureau, is checked and verified by the electrical inspectors, and is held in the files until final approval is given.

State of California laws require that the electrical installation of wiring circuits, fixtures, signs, motors and electrical appliances be made by contractors licensed by the State, and San Francisco ordinances require that such licensed contractors be registered with the Bureau. Industrial plants which have their own plant electricians must also register with the Bureau.

All spray painting establishments in the City of San Francisco are licensed through the Fire Prevention Bureau, and before licenses are issued the electrical work connected therewith must be approved by this Bureau.

BOILERS AND AIR TANKS

Steam boilers and air pressure tanks are inspected to ensure compliance with all existing laws.

PERSONNEL

The personnel of this Bureau as of June 30, 1953, consisted of 50 persons in the various classifications shown on the accompanying organization chart.

PERSONNEL LOSSES

Mr. Nicolas J. Siggins died April 15, 1953 after 30 years of meritorious service.

ORGANIZATION

The organization of the Bureau is shown on the accompanying chart. Duties of the various members of the staff are described in the following paragraphs.

Bureau of Building Inspection

Superintendent - In addition to supervising the office, he takes an active part in the deliberations of various departments of the City government as well as other organizations with reference to matters of building construction, the building code, and building safety.

Supervising Construction Inspector - Acts as assistant to the Superintendent in the field; assigns and supervises the work of building inspectors; prepares records and reports; and checks construction progress.

Building Inspectors - One building inspector assists the Supervising Construction Inspector. He assists the public at the counter and provides them with the information they seek concerning various building regulations.

One building inspector represents the Director, Department of Public Works, on all cases coming before the Board of Permit Appeals with the exception of new construction. He inspects and reports on all night clubs, dance halls, and condemnations, when requested by the Police Department or the Department of Public Health.

Thirteen building inspectors are assigned to specific districts into which the city is divided and are charged with the responsibility for inspection work in their respective districts. This includes new construction of all types, alterations, billboards and signs. They report on all applications for construction in their districts prior to examination by the divisions of the Bureau; prepare and post Certificates of Final Completion; check and follow up complaints; interview property owners; and appear before courts in matters of condemnation and prosecution.

Boiler Inspectors - Make all installation inspections where any pressure vessel is installed. Inspect all boilers and air pressure vessels regularly when they are not insured and inspect and recommend repairs to defective equipment.

As deputy state inspectors, they must check all requests made by the Division of Industrial Safety and report any action taken by the City. They investigate all accidents where pressure vessels are involved and report the probable cause to the State and to the National Board of Boiler and Pressure Vessel Inspectors.

One inspector is a member of the A.S.M.E. Boiler Code Committee and passes on all new A.S.M.E. code changes and submits his report each month to the New York office of the A.S.M.E.

Complaints about pressure vessels are investigated and the necessary action taken to eliminate any defects or violations if found.

Bureau of Building Inspection

Senior Engineer (Civil) - Acts as Chief Structural Engineer and as principal assistant to the Superintendent; reviews engineering data submitted for approval of new materials and assemblies and makes recommendations to the Superintendent regarding such approvals; and supervises the work of the other engineers in the Bureau.

Structural Engineers (Civil) - Check and report on all plans pertaining to structural engineering; make field inspections; follow up matters concerning structural safety brought to their attention by the Supervising Construction Inspector or the district building inspectors; and assist other departments or bureaus in structural matters.

One Engineer, Civil, examines all plans and details for new construction and estimates the cost thereof. He also represents the Director, Department of Public Works, on all cases coming before the Board of Permit Appeals which concern new construction.

Senior Clerk - In charge of all clerks in the Bureau.

Chief Electrical Inspector - Under general direction assigns, supervises and reviews the work of electrical inspectors; approves or disapproves plans and specifications for electrical installations; supervises the maintenance of inspection records; and makes required reports.

Two electrical inspectors are detailed to the enforcement of the Electrical Sales Ordinance. This ordinance governs the sale, display, or giving away as a premium, all electrical material, devices and appliances designed for attachment to, or installation in or on any electrical circuit or system for light, heat or power. This entails visiting all retail stores, premium stores, factory agents, jobbers, manufacturers, and wholesalers to inspect all materials, devices, and appliances, and to determine whether they are approved by this department before they can be sold, displayed, or installed in San Francisco. In many cases this means granting a provisional approval on articles that have been submitted to Underwriters' Laboratories, Inc., for testing but testing not having been completed, allows a manufacturer to install or sell these appliances or materials with the proviso that any corrections required be made in the field. There are 1854 retail stores registered under this ordinance at present which are visited regularly for the purpose of inspecting the merchandise. As more merchants are going into business all the time and many ownerships are being changed, it is necessary to visit these stores to check their registration and inspect their merchandise.

The Line Inspector - inspects all installations, alterations, and maintenance of overhead lines owned and operated by public and private utilities used for the purpose of distributing electric power, light, communication and signal transmission, to see

Bureau of Building Inspection

that they conform to the Rules for Overhead Line Construction (G.O. 95), Public Utilities Commission, State of California, and the San Francisco Electrical Code. The line inspector also checks plans and specifications, and inspects all overhead lines pertaining to trolley coach installations. He inspects temporary electrical street decorations when supported by trolley span wires, or messengers and inspects installations of radio and television antennas. He checks all underground districts to see that they are kept clear of all overhead wires and cables and checks the erection of scaffolds that may be in proximity to high voltage lines. During the fiscal year 1952-1953, 744 pole permits were issued.

Two electrical inspectors - are assigned to office work. They handle all complaints and requests for information from the public.

Fourteen electrical inspectors - are assigned to districts in the City and each handles all of the electrical work in his assigned district except those items under the Electrical Sales Ordinance.

BUILDING CODE

The Building Code is being completely revised and will probably be submitted to the Board of Supervisors for adoption during the fiscal year 1953-1954.

The work on the Code is being done by the Superintendent, the Senior Structural Engineer with the assistance of the Supervising Construction Inspector on special problems. The first 29 Articles in first draft form have been mimeographed and distributed to the interested building industry organizations, individuals, and Code Committees for review and comment, and much of such comment is now being studied for acceptance or rejection.

The Building Industry Conference Board has appointed a Building Code Committee which acts as a clearing house for all organization committees, and which will work directly with the Bureau in completing the final draft of the Code.

Articles 30 to 46 are being mimeographed and will be delivered to the various committees in the near future.

The Code in its final form will be patterned after the Uniform Building Code, and will have included up-to-date provisions of the National Fire Code.

Somewhat new as far as building codes are concerned, but desirable, will be an article on the use of plastics and regulations regarding the insulation of buildings. Included also are requirements for inside wall and ceiling finishes. Other new provisions are those regarding mechanical ventilation, heating, and refrigeration.

Bureau of Building Inspection

BUILDING CONSTRUCTION

The volume of building construction for the following fiscal years was:

1949-1950	\$ 57,390,275
1950-1951	78,432,578
1951-1952	47,066,668
1952-1953	45,920,105

WORK DONE

The extent of routine operations of this Bureau for the fiscal year is set forth in the following tabulation taken from the records of the Central Permit Bureau.

Type of Construction	No. of Permits	Estimated Cost
1 A	6	\$ 2,265,459
1 B	10	7,865,778
2	-	--
3	41	2,480,650
4	20	367,528
5	1,177	19,572,839
Alterations	7,240	13,367,851
Totals	8,494	\$45,920,105

Type 1A - Steel frame with reinforced concrete walls and floors.
Fire-resistive construction.

Type 1B - Built entirely of reinforced concrete. Fire-resistive construction.

Type 2 - Heavy timber construction with exterior walls of masonry.

Type 3 - Wood frame floors with exterior walls of masonry.
Ordinary masonry construction.

Type 4 - Light incombustible frame construction.

Type 5 - Wood frame construction.

BUILDING AND BOILER PERMITS AND INSPECTIONS

The following compilation of statistics of monthly reports indicates the volume of work done during the fiscal year for other than Electrical Inspection, unless noted:

Bureau of Building Inspection

Inspections reported by inspectors of buildings	50,869
Projects remaining on which permits have been issued that have not been reported completed by inspectors of buildings	2,592
Complaints that have been reported adjusted by inspectors of buildings	2,466
Inspections reported by inspectors of boilers	2,154
Projects remaining on which permits have been issued that have not been reported completed by inspectors of boilers	4
Complaints and requests for information recorded	139
Applications for permits examined by and approved by structural engineers	4,291
Applications for permits pending	98
Applications for permits examined and approved by plan checker	1,441
Miles traveled during the year by 29 passenger cars on inspection service includes electrical inspectors	179,128

ELECTRICAL PERMITS AND INSPECTIONS

The following compilation of statistics indicates the volume of work done during the fiscal year by the Electrical Inspection Division:

Permits issued, wiring, fixtures, signs	17,096
Inspections made	55,001
Complaints investigated (found defective)	7,112
Installations uncovered that were not with the department ("sneaked in" jobs)	2,839
Installations in progress as of June 30, 1953	16,438
Installations completed	19,542
Pin ball machine inspections	7,328
Juke box inspections	5,184
Electrical Sales inspections	3,755
Overhead line inspections	4,695

Bureau of Building Inspection



UNIVERSITY OF CALIFORNIA TEACHING HOSPITAL
ARGUELLO AND PARNASSUS STS.
Clinton Construction Co.
July 1953



KAISER PERMANENTE HOSPITAL
GEARY & BAKER STS.
Louis C. Dunn Inc.
July 1953

BUREAU OF ARCHITECTURE
Dodge A. Riedy - City Architect

FUNCTIONS

The activities of the Bureau of Architecture are divided into three distinct functions. Primarily, the Bureau is concerned with complete architectural services on requests of other Bureaus and Departments for alterations, general repairs, maintenance, remodeling, and new minor construction programs. Program building requirements with necessary survey research for other needs including estimates and total allotments for future civic building construction budgets is an important work of this division which will increase with the Fire Department Bond Issue Reconstruction program and the Health and School Departments programs.

The second function is concerned with supervising, consulting, coordinating, allotment programing, estimating, and checking the civic work program of Architects under contract with the City. This will be continuous until the completion of the 1948 School Bond Issue and the Fire Department Bond Issue.

A partial function includes architectural services such as design, planning, architectural detailing, and specifications for the Bureau of Engineering and the Water Department. This also includes preliminary studies, complete with program requirements and building cost estimates as well as complicated alterations for long term budget purposes on requests of other Bureaus and Departments.

An achievement in cooperative planning, designing, and developing of construction contract documents between outside Architects, Structural Engineers, Mechanical and Electrical Engineering firms, and the Bureau of Engineering, was necessary in order to allow the various stages of the building program to proceed both in the field and office.

Similar to the School Program, but on a smaller scale, the projects for the Registrar of Voters, Department of Electricity, Library, Fire, and Public Health Departments have proceeded as rapidly as these respective programs could permit.

The construction work completed increased approximately 33% over that of the last fiscal year. Contracts under construction decreased 10% and the work under preparation was 9% less. However, approximately \$2,500,000.00 of the work under preparation is completed and ready for advertising for bids.

GENERAL

The following is a resume' of the 1948 School Bond Program for construction of new schools as of the end of this fiscal year:

Bureau of Architecture

Stage & Number of Schools	Cost	Percent of Total
Construction Completed (13)	\$11,961,009.58	33
Construction Under Contracts (12)	12,843,235.00	35
Plans ready to be Advertised (3)	2,521,000.00	7
Working Drawing Stage (4)	5,245,500.00	14
Preliminary Drawing Stage (3)	4,058,000.00	11
	\$36,628,744.58	100

SCHOOL BOND ISSUE

The Bureau of Architecture's activities on the School Bond Program of new construction projects for architectural services is scheduled to be completed at the end of the next fiscal year. The work in the field will carry over to the following fiscal year. The maintenance, modernization, and miscellaneous alteration summer work program will also continue.

FIRE DEPARTMENT BOND ISSUE

The programing of the Fire Department Bond Issue was started at the end of this fiscal year and will be well underway by the Fall of 1953. Approximately nineteen new fire houses and approximately 22 reconstruction projects are scheduled on this program. The selection of sites for the first seven new fire houses is now under investigation.

SURVEY REPORT

The Survey Report of the future occupancy of the City Hall, construction of both a New City & County Office Building and a Criminal Courts & Police Building, was completed and submitted with the Bureau of Architecture's recommendation. The data presented was a basic foundation for an overall program.

PERSONNEL

The regular staff of the Bureau increased during the fiscal year. In the Inspection Division, 15 temporary Inspectors were hired for school modernization summer work, which as a rule, is terminated within three months.

	June 30, 1952		June 30, 1953		Change	
	Reg.	Temp.	Reg.	Temp.	Reg.	Temp.
City Architect	1		1			
Assistant City Architect	1		1			
Architects	7		7			
Sr. Architectural Draftsmen	7		8		1	
Architectural Draftsman			1		1	
Office Assistant	2		2			
General Clerk Stenographers	5		5			
General Clerk Typists	2		2	3		3
Supervising Constr. Inspector	1		1			
Building Inspectors	15	29	21	15	6	-14
TOTALS	41	29	49	18	8	-11

Bureau of Architecture

The bureau of Architecture's personnel is divided into four groups according to location. The duties performed by these groups are briefly outlined as follows:

Personnel	Group	Location	Activities
8	1	Room 265, City Hall	Administrative, Conferences, Assembly of Plans & Specs. for bidding, general files, drafting for budget.
10	2	Room 252, City Hall	Inspection, Estimates, Preliminary Department. Program & Budget Section, Analyses of Construction Costs.
13	3	45 Hyde Street	General Drafting Room. Specifications, drawings, general working drawing Dept. checking, Research, & Report Section.
36	4	In the Field	Field Inspection.

WORK DONE

The majority of the work performed by the Bureau of Architecture during the fiscal year of 1952-1953 was uniformly divided between the primary and secondary functions of the Bureau. During this year, the value of the work performed was as follows:

Work Completed	\$ 8,555,098.54
Contracts Under Construction	14,968,603.00
Work Under Preparation	16,255,235.00
TOTAL	\$39,778,936.54

The segregation of this work by Departments for which the work was done is shown in the following table. Details of the class of work and the type of project will be found in Appendix II.

Bureau of Architecture

SUMMARY OF CONSTRUCTION PROGRAM
SHOWING ALL WORK COMPLETED, UNDER CONSTRUCTION, AND UNDER PREPARATION
JULY 1, 1952 TO JUNE 30, 1953

WORK COMPLETED

Board of Education		
New School Bldg. Constr.	\$6,983,046.00	
Test Borings & Soil Analyses	5,490.00	
Miscellaneous Alterations	1,264,839.07	
		\$ 8,253,375.07
Public Health		
San Francisco Hospital	\$ 120,587.60	
Laguna Honda Home	23,409.00	
		143,996.60
Museums		
M.H. deYoung Memorial	\$ 66,404.17	
Legion of Honor	4,594.00	
		70,998.17
Fire Department		
Alterations		15,424.00
Civic Center		
Survey	\$ 10,000.00	
City Hall	3,095.14	
Civic Auditorium	28,109.56	
Library Annex	2,400.00	
		43,604.70
Miscellaneous		27,700.00
	TOTAL WORK COMPLETED	\$ 8,555,098.54

CONTRACTS UNDER CONSTRUCTION

Board of Education		
New School Bldg. Constr.	\$12,843,235.00	
Test Borings & Soil Analyses	1,980.00	
Miscellaneous Alterations	1,253,713.00	
		\$ 14,098,928.00

Bureau of Architecture

Public Health		
San Francisco Hospital	\$	109,105.00
Laguna Honda Home		5,511.00
		\$ 114,616.00
Fire Department		
Alterations	\$	18,743.00
New Construction		716,159.00
		734,902.00
Civic Center		
City Hall		6,950.00
Miscellaneous		13,207.00
TOTAL CONTRACTS UNDER CONSTRUCTION		\$14,968,603.00

WORK UNDER PREPARATION

Board of Education		
New School Bldg. Constr.	\$11,824,500.00	
Miscellaneous Alterations	446,395.00	
		\$12,270,895.00
Public Health		
New Construction	\$	84,000.00
San Francisco Hospital		127,800.00
Laguna Honda Home		474,350.00
		686,150.00
Fire Department		
New Construction	\$ 2,160,000.00	
Alterations	350,000.00	
		2,510,000.00
Public Library		
New Construction	\$	290,000.00
Alterations		6,500.00
		296,500.00
Civic Center		
Civic Auditorium	\$	16,500.00
City Hall		12,500.00
		29,000.00
Miscellaneous		462,690.00
TOTAL WORK UNDER PREPARATION		\$16,255,235.00
GRAND TOTAL		\$39,778,936.54



PARK MERCED FIRE HOUSE



TWIN PEAKS ELEMENTARY SCHOOL



EDUCATION BUILDING
Under Construction



MUSIC AND SPEECH BUILDING
Nearing Completion
CITY COLLEGE

MAINTENANCE AND OPERATION

Lawrence J. Archer, Assistant Director of Public Works

Maintenance and Operation activities of the Department of Public Works are centered in the four bureaus of Sewer Repair, Street Repair, Street Cleaning, and Building Repair, except that the operation of the City's three sewage treatment plants are under direction of the City Engineer.

The new Maintenance Yard at 2323 Army Street will be 2 years in operation on October 1, 1953. This yard provides facilities for the Bureau of Sewer Repair, Bureau of Street Repair, Bureau of Street Cleaning, Bureau of Building Repair, and the Bureau of Accounts.

Preparations were made to take over the old Incinerator Site that adjoins the Maintenance Yard, upon the present tenants' vacating the premises on November 1, 1953, as a needed annex to yard operations and as a factor in effecting sizeable economies in operation.

The new Broadway tunnel was opened to traffic for the first time on December 21, 1952. Operation and Maintenance of the tunnel is under direction of the Bureau of Street Repair and an attendant from the bureau is on duty at all times.

Contract plans and specifications for a new municipal asphalt plant, to replace the present antiquated plant, were completed by the Bureau of Engineering. The present plant has been in operation at Florida Street and Treat Avenue since April 1, 1915, a period of 38 years. This present plant was a replacement to a former city asphalt plant that had been in operation for about 6 years at 16th and Harrison Streets. The present Municipal Asphalt Plant is in the advanced state of obsolescence and no longer operates at practical efficiency. Rising costs of maintenance, renewals and repairs during the past 6 years, as a result of the plants declining utility, have reached a time that replacement is a matter of economy when consideration is given to the increase in efficiency that is attainable by operating a new plant of modern design. The new plant will be located on City land at the southwest intersection of Quint Street and Jerrold Avenue.

Studies and analyses toward the improvement of methods in operation and the improvement in the use of manpower, material, and equipment are being accomplished as the time permits.

Investigative surveys were made of the 3 lift bridges, for the purpose of determining means of reducing operation costs, with the result that watchmen services were discontinued at the Islais Creek Bridge as existing signal devices were considered reasonably adequate for safety requirements. This change will effect an annual saving of about \$18,700 at today's wage rates. Attention is also being given to the improvement of signal devices at

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the Fourth Street Bridge to enable the closing of the bridge to channel traffic daily between the hours of 8 PM and 4 AM:

An Adnun paving machine was purchased for the Bureau of Street Repair and was placed in service July 28, 1952. The use of this machine gives greatly improved resurfacing results, both in quantity and quality and reduces the field cost of resurfacing about 40 percent when compared to hand laying methods otherwise used. Insufficient provision of funds for the purchase of materials, however, limited the use of the machine to only about 7 months of the year.

The Bureau of Building Repair made preparations to take over the maintenance and repair of additional buildings of other departments, beginning July 1, 1953, in accordance with the Controller's budgetary instructions. This bureau will then maintain and repair all public buildings except for the following activities:

- (a) California Academy of Sciences
- (b) War Memorial
- (c) California Palace of Legion of Honor
- (d) Recreation and Park Department
- (e) de Young Memorial Museum
- (f) San Francisco Unified School District
- (g) Departments of the Public Utilities Commission

A definite need exists for a new position of Assistant Superintendent in the Bureau of Street Repair, to provide for adequate top level supervision in the field and to provide means for a thorough and systematic survey and record of the condition of streets, structures and appurtenances. The cost for such a position would be more than compensated by the increased efficiency of the Bureau and by the greater possibility of reducing the number of claims and judgments against the City arising from defective street conditions which is now at an annual cost to the City of about \$30,000.

RAINFALL

The extent and distribution of rainfall has considerable bearing upon field operations of the maintenance bureaus during the winter months. The rainfall of 1952-53 did not result in any unusual occurrences and was quite in contrast to the exacting demands of the previous year.

The annual rainfall for San Francisco, as recorded by the Federal Weather Bureau, from June 30, 1952 to July 1, 1953 amounted to 21.10 inches. Monthly precipitation, in inches, was as follows:

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July 1952	-	Trace	January 1953	-	3.26
August	-	0.01	February	-	0.04
September	-	Trace	March	-	1.83
October	-	0.07	April	-	3.42
November	-	2.42	May	-	0.38
December	-	9.06	June	-	0.61

The Weather Bureau changed the norm for annual rainfall in San Francisco from 22.02 inches to a new average of 20.51 inches which is based on the precipitation occurring over the 30 year period ending December 1950.

EXPENDITURES

The total expenditures including encumbrances incurred for the four Maintenance and Operation bureaus amounted to \$5,640,110 in 1952-53 compared with \$5,434,820 in 1951-52; an increase in expenditure of \$205,290 or about 3.8 percent. Expenditures of these bureaus are compared below:

Bureau of Building Repair	1951-52	1952-53
Budget	\$ 773,627.58	\$ 793,277.57
Interdepartmental	1,336,084.80	1,357,047.10
Total	\$2,109,712.38	\$2,150,324.67
Bureau of Street Cleaning		
Budget	\$1,332,661.51	\$1,418,547.19
State Highway Funds	55,265.32	54,976.91
Total	\$1,387,926.83	\$1,473,524.10
Bureau of Sewer Repair		
Budget	\$ 602,038.70	\$ 596,423.94
Interdepartmental	5,240.79	986.17
Side Sewers	110,643.88	104,771.22
Sewage Pumping Stations	59,764.18	65,169.09
Total	\$ 777,687.55	\$ 767,350.42
Bureau of Street Repair		
Budget	\$ 829,717.34	\$ 945,172.99
Interdepartmental	201,174.24	159,063.44
Bridges & Tunnel	128,601.40	134,598.46
Total	\$1,159,492.98	\$1,238,834.89

PERSONNEL

Personnel in the four Maintenance and Operation bureaus decreased from an average total of 943 employments for fiscal year 1951-52 to an average total of 929 employments for fiscal year 1952-53; an average net decrease of 14 employments, or decrease of about 1.5 percent.

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The average salary or wage for employments in the Maintenance and Operation bureaus increased from \$4,363.67 in 1951-52 to \$4,513.89 in 1952-53, a unit increase of \$150.22 or 3.5 percent. The average number of employees, budgeted and interdepartmental, and the average salary or wage for each of the bureaus during the past two years are compared as follows:

Bureau	Average Number of Employees		Average Yearly Salary	
	1951-52	1952-53	1951-52	1952-53
Sewer Repair:				
Sewer Maintenance	120	110	\$ 4,321.12	\$ 4,749.00
Pumping Stations	8	8	4,654.83	4,514.75
Street Repair:				
Street Maintenance	160	153	3,904.24	4,277.89
Bridge&Tunnel Operation	23	25	4,533.89	4,507.85
Street Cleaning	319	328	4,007.86	4,156.78
Building Repair	313	305	4,761.91	4,877.11
Average Total	943	929		

BUREAU OF SEWER REPAIR

Emile F. Muheim, Superintendent

FUNCTIONS OF BUREAU

This Bureau is responsible for the maintenance and operation of 790 miles of various size main sewers in the combined storm and sanitary sewer system of San Francisco.

In addition there is the responsibility of construction and maintenance of all side sewers connecting all users to the sewer system. Catch basins, manholes and subsurface structures such as outfalls, storm weirs and by-passes are also under the jurisdiction of the Bureau.

Another function of the Bureau is the operation and maintenance of twelve sewage pumping stations.

ORGANIZATION

The operations of the Bureau are controlled by the Superintendent and two assistants. One assistant is responsible for the recording of all inspections and jobs and he also supervises all brick work, side sewer installations and repairs, and the operation of the sewage pumping stations. The other Assistant Superintendent supervises all main sewer repairs, sewer cleaning, catch basin cleaning and miscellaneous services.

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The various types of work are done by organized crews under three general foremen. The crews consist of combinations of various crafts calling for classifications ranging from operating engineers and junior operating engineers in the sewage pumping stations to bricklayers and hodcarriers, cribbers, chauffeurs, sewer cleaners and laborers in the sewer maintenance work.

One crew works a night shift from 4:00 P.M. to midnight and all men are subject to emergency calls in the event of serious sewer breaks.

The operation of the 12 sewage pumping stations is under the jurisdiction of an Assistant Electrical Engineer and a force of 7 operating and junior operating engineers.

OPERATIONS

During the past year the following work was accomplished:

There were 673 side sewers either repaired or installed as new connections involving the expenditure of \$104,771.22.

A total of 16,016 out of about 25,000 catch basins were cleaned through the use of 10 eductors. This averaged 63 basins per day at a cost of \$5.49 per basin and involved the removal of about 98,000 cubic yards of material.

In the general sewer system there were: 7,682 complaints investigated; 608 repairs to sewers; 151 repairs to manholes; 171 main sewer cleanings requiring the removal of 1,760 cubic yards of material.

Twelve sewage pumping stations with a combined capacity of 21,630 gallons per minute pumped a total of 3,100 million gallons of sewage. Five new stations, two of which will replace existing ones, will increase the combined capacity by 15,250 gallons per minute in the coming year.

A detailed description of the sewage pump stations and the operation of the gas detection operations will be found in subsequent pages of this report.

SEWAGE PUMPING STATIONS

In the Bureau of Sewer Repair, the maintenance and operation of the Sewage Pumping Stations as well as the personnel, are under the supervision of an Assistant Electrical Engineer.

At present, there are twelve stations located in low-lying areas of the city which cannot be drained by gravity into existing main sewers. These stations are generally designed and constructed for capacities sufficient to handle all sanitary sewage and in addition, to take care of a rain storm of .02 inches per hour

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intensity. All stations, with one exception, are provided with overflow spillways so that run-off beyond the capacity of the station is discharged directly into the ocean or bay. In most cases, the stations have sufficient capacities so that one pumping unit can be shut down for repair during the dry season.

All of the pumping stations are operating with automatic controls. At two of the larger stations, namely, Commercial and Marina, operators are on duty during two eight-hour shifts per week day, (8:00 AM to 12:00 PM), and one shift on Saturday and Sunday. At each of two other stations, Park Merced and Sea Cliff No. 2, an operator is on duty for a single shift each day (8:00 AM to 4:00 PM), Monday through Saturday, to perform maintenance work and make required adjustments.

The Operating Personnel for these twelve stations consisted of:

- 1 Assistant Engineer, Electrical
- 2 Stationary Operating Engineers
- 5 Stationary Junior Operating Engineers

At the present time, the Mariposa station is under construction and is expected to be completed in November of 1953.

MAINTENANCE AND REPAIRS TO PUMPING STATIONS

The following list pertains to major maintenance and repairs for the sewage pumping stations accomplished during the year 1952-1953.

1. Commercial Street

Installed new gate valves on suction lines to No. 1 and No. 2 pumps. Repaired check valve to No. 2 pump and installed new check valve to No. 1 pump. Removed old coupling and installed dutchman to No. 3 pump discharge line. Repaired pit syphon lines to No. 1 and No. 2 pumps. Overhauled gasoline engine to auxiliary pump, overhauled battery charger, controls to No. 3 pump and fan relay.

2. Fitzgerald Avenue

Installed new float and adjusted controls. Overhauled No. 2 pump and motor. Installed new check valve to No. 2 discharge line. Completed minor structural repairs to station.

3. Fulton Street

Overhauled controls to No. 1 pump motor. Overhauled Flow-meter transmitter and receiver. Repaired fresh water service line and overhauled motor and controls to basket hoist. Sump to station was completely cleaned.

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4. Hyde Street

Installed new bearings and balanced motor to No. 2 pump. Overhauled and repaired Flowmeter transmitter and received and installed check valves to both pumps.

5. Lakeshore

Overhauled and repaired controls to No. 1 pump motor. Installed new float and adjusted controls to same. Made structural repairs to station due to damage by vandals.

6. La Place Canyon

Overhauled both pumps and balanced motors to same.

7. Marina

Overhauled recording instruments to both pressure and flow watch. Installed new resistors to controls. Replaced worn bearings to No. 2 exhaust fan motor. Repaired syphon and discharge lines to valve pit and installed new grate bars to influent structure.

8. Park Merced

Repaired control circuit to No. 1 and No. 2 pump motors.

9. Sea Cliff No. 2

Repaired water line and both pumps to seal water system. Aligned shaft to No. 1 pump and repaired time meter to No. 1 pump.

10. Vicente Street

Installed overload element to No. 1 pump motor and replaced burned out holding coil to No. 2 pump motor control. Balanced and serviced motor to No. 1 pump. Removed No. 1 pump in preparation to replacement with a new pump.

Descriptive information for each of the twelve stations is as follows:

COMMERCIAL STREET PUMPING STATION

The Commercial Street Pumping Station is located at 81 Commercial Street, between Embarcadero and Drumm Streets. The station was originally placed in operation in 1905. Some alteration was made in 1908 and again in 1935.

The contributory sanitary border areas are: Market, Second, Howard, Embarcadero Streets and the parts of California, Pine and

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Bush Streets, located below the Sansome Street Sewer tunnel. Normal average daily flow is 750,000 gallons which is increased by over 150 percent during rain storms. Due to the fact that the sanitary drainage system to this station is located below the normal water level of the bay, the station cannot be by-passed or shut down. The sewage is pumped through a 18 inch diameter force main and discharged into the North Point main at Sansome and Commercial Streets, and intercepted at North Point Sewage Treatment Plant.

In 1944 a gasoline driven pump with a capacity of 900 G.P.M. was installed as an emergency stand-by in case of power failure. Although it has saved us embarrassment during power failure of short duration and low flow, a very serious situation could occur should a power failure of a longer duration occur during a heavy flow. Should a power failure occur during a rainstorm, we will be absolutely helpless in preventing flooding of lower Market St. A new station with modern equipment is very seriously needed and necessary funds should be provided for its construction.

At present the ringing of a buzzer located in the nearby fire-house operated by remote control from the pumping station, warns the fireman on duty that the station is flooding. Immediately the fireman proceeds to contact the station operating personnel, Bureau of Sewer Repair and others, by telephone. However, if this procedure should become necessary during a rainstorm at night, in the absence of an operator to start the gas pump, considerable flooding of this district might result.

Equipment includes three 6 inch Vertical single stage pumps rated at 2100 G.P.M. against a total dynamic head of 20 feet with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 25 H.P. Motor at 870 R.P.M. There is also a 4 inch horizontal single stage pump rated at 1000 G.P.M. against a total dynamic head of 29 feet, driven by a 15 H.P. gasoline engine at 1600 R.P.M.

FITZGERALD PUMPING STATION

Fitzgerald Pumping Station is located at Fitzgerald Avenue and Griffith Street, South Basin. The station was placed in operation originally in 1928. In 1942 the Federal Public Housing Authority constructed the present war housing project and the location of the pumping station was moved approximately 50 feet in a south east direction to the present location and placed in operation in 1943. The purpose of this station is to prevent pollution of the southern part of the South Basin shore line.

This pumping station serves the District bordering Carrol Avenue, Ingalls Avenue, Jamestown Street and the San Francisco Bay. The sewage is pumped through a 8 inch diameter force main to Fitzgerald Avenue at Ingalls Street. The station is fully automatic in operation. There is no permanent operator assigned

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to this station. Regular inspection is made to assure efficient operation and proper maintenance.

Equipment includes two 4 inch vertical, single stage pumps (one of which is of the submerged type) rated at 400 G.P.M. against a total dynamic head of 48 feet with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle 15 H.P. motor at 1150 R.P.M.

FULTON STREET PUMPING STATION

The Fulton Street Pumping Station is located on the south side of Fulton Street at 48th Avenue and was placed in operation in 1950 to prevent untreated sewage from entering the Mile Rock Sewer Tunnel.

This pumping station serves the district which is bounded on the north by the Presidio, on the east by 46th Avenue, on the south by Fulton Street and on the west by the Pacific Ocean. The sewage is pumped through a 8 inch diameter force main to 46th Avenue and Fulton Street and thence into a 24 inch sewer which in turn is intercepted at Richmond-Sunset Sewage Treatment Plant.

The station is fully automatic in operation. There is no operator assigned permanently to this station but regular inspection is made to assure efficient operation and proper maintenance.

Equipment includes two 5 inch vertical single stage pumps rated at 800 G.P.M. against a dynamic head of 56 feet, with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 20 H.P. motor at 850 R.P.M.

HYDE STREET PUMPING STATION

Hyde Street Pumping Station is located on the southwest corner of Jefferson and Hyde Streets and was placed in operation in 1948. It was one of the final units of the program to remove sewage pollution along the north shore line particularly at Aquatic Park, one of San Francisco's popular recreational beaches.

The sanitary area tributary to the Hyde Street station comprises 14 acres and is bounded on the north by San Francisco Bay, on the south by Beach Street, on the west by Larkin Street and on the east by Jones Street. The sewage, which consists mostly of industrial waste, is pumped through a 6 inch diameter force main to Beach and Hyde Streets into the gravity system which is a tributary to the North Point Sewage Treatment Plant.

LAKESHORE PUMPING STATION

Lakeshore Pumping Station which is located near the north

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shore of the northerly arm of Lake Merced was constructed by the owners of the adjacent subdivision and started operation in 1950.

The sanitary area tributary to this station contains 220 acres in the Lakeshore Park No. 3 subdivision. The sewage is pumped through a 10 inch diameter cast iron force main to Eucalyptus Drive and is intercepted at Richmond-Sunset Sewage Treatment Plant.

The station is fully automatic in operation, with no permanent operator assigned. However, regular inspection is made to assure efficient operation and proper maintenance.

Equipment includes two 5 inch vertical single stage pumps each rated at 1300 G.P.M. against a total dynamic head of 96 feet, with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 20 H.P. motor at 1750 R.P.M.

LA PLACE PUMPING STATION

The La Place Pumping Station, which is located on the south side of Portola Drive about 1300 feet east of O'Shaughnessy Boulevard, was completed in 1949 to serve the new building tract north of the station. The tributary area of this station comprises 35 acres which at present consists mostly of unimproved property. The sewage is pumped through a 6 inch diameter cement asbestos force main laid in the southerly sidewalk area of Portola Drive.

The station is fully automatic in operation with regular inspection made to assure efficient operation and proper maintenance.

Equipment includes two 4 inch vertical single state pumps of the submerged type each rated at 360 G.P.M. against a dynamic head of 59 feet, with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 10 H.P. motor at 1755 R.P.M.

MARINA PUMPING STATION

The Marina Pumping Station is located below the grassed area of the Marina in the vicinity of Marina Boulevard and Casa Way. It was placed in operation in 1936 to relieve pollution of the shore line from Yacht Harbor to Fort Mason and to also relieve conditions which were unsatisfactory at Aquatic Park and was designed to pump a storm run-off of 0.02 inches per hour from the Marina District, in addition to the normal sanitary flow.

This pumping station serves the Marina sewage district which is bounded on the north by San Francisco Bay, on the south by Clay Street, on the east by Jones Street, and on the west by the Presidio, and in addition it takes a major portion of the sewage from the Presidio Military Reservation. The sewage is pumped through

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a 30 inch diameter force main and gravity sewer a distance of approximately two miles where it discharges into a sewer leading to the North Point Sewage Treatment Plant.

The station is fully automatic in operation with an operating engineer in charge to attend to general maintenance and necessary minor repairs to the equipment during two 8 hour shifts (8:00 A.M. to 12 Midnight), Monday through Friday, and on Saturday and Sunday the station is covered by one single eight-hour shift from 8 A.M. to 4 P.M.

Equipment includes four 10 inch horizontal single-stage pumps, each rated at 4000 G.P.M. against a total dynamic head of 70 feet, with each pump being driven by a 440 Volt, 3 Phase, 60 Cycle, 100/60 H.P. motor at either 870 R.P.M. or 695 R.P.M. There is also one 10 inch horizontal single-stage pump rated at 2300 G.P.M. against a total dynamic head of 35 feet driven by a 440 volt, 3 phase, 60 Cycle, 30 H.P. motor at 870 R.P.M.

During storms and power failures the high level of the sump is controlled by a hydraulically operated emergency valve which closes when the sump level reaches an elevation of 11 ft. 6 in.

PARKMERCED PUMPING STATION

Parkmerced pumping station which is located on Lakemerced Boulevard at Stanley Drive, was placed in operation in 1944 to take care of the Metropolitan Building Tract and the sewage district is made up mainly of this area. The sewage and stormwater is pumped through a 12 inch diameter force main to Font Street, discharged into a sewer from Stanley Street Diversion and intercepted at Richmond Sunset Sewage Treatment Plant. The station is fully automatic in operation with an operator in charge from 8:00 A.M. to 4:00 P.M., Monday through Saturday, to attend to general maintenance and necessary repair to the equipment.

Equipment includes two pump units, each of which consists of two 6 inch horizontal single stage pumps which are rated at 1800 G.P.M. each against a total dynamic head of 123 feet, with each pump being driven by a 440 volt, 3 Phase, 60 Cycle, 50 H.P. motor at 1170 R.P.M. One unit is sufficient to take care of the normal flow but during rainstorms, as the level in the sump rises to a predetermined point, the second unit will cut in automatically.

PINELAKE PUMPING STATION

Pinelake pumping station, which is located at Pinelake near Crestlake Drive and Wawona Street, was placed in operation in 1927 to prevent pollution of Pinelake.

The pumping station serves the buildings on the north side

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of Crestlake Drive from Wawona Street to Palos Place. The sewage is pumped through a 3 inch diameter force main to Crestlake Drive at Wawona Street and intercepted at Richmond-Sunset Sewage Treatment Plant.

The station is fully automatic in operation with regular inspection made to assure efficient operation and maintenance.

Equipment consists of one 3 inch vertical single stage pump of the submerged type rated at 170 G.P.M. against a total dynamic head of 56 feet, driven by a 220 Volt, 3 Phase, 60 Cycle, 5 H.P. motor at 1750 R.P.M.

SEACLIFF PUMPING STATION NO. 1

Seacliff Pumping Station No. 1 is located above Phelan Beach at the west end of Seacliff Avenue. It was placed in operation in 1929 to relieve the shore line around Phelan Beach and was designed and constructed to take care of the sanitary flow only from the buildings at the west end of Seacliff Avenue at El Camino Del Mar. The sewage is pumped through an 8 inch diameter force main to Seacliff Avenue at El Camino Del Mar into the collection system of Seacliff Station No. 2.

The station is fully automatic in operation with no permanent operator assigned but with regular inspection made to assure efficient operation and proper maintenance. Equipment includes two 4 inch vertical single stage pumps of the submerged type rated at 530 G.P.M. against a total dynamic head of 51 feet, with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 15 H.P. motor at 1150 R.P.M.

SEACLIFF PUMPING STATION NO. 2

Seacliff pumping Station No. 2, which is located at Baker's Beach, North of Seacliff Avenue, was placed in operation in 1940 to prevent pollution of the shoreline of Baker's Beach.

This pumping station serves the Seacliff district which is bounded on the east by 22nd Avenue, on the south by Lake Street, on the west by 32nd Avenue and on the north by Phelan and Baker's Beach.

The sewage is pumped through an 8 inch diameter force main to 24th Avenue at Lake Street where it is discharged into the Richmond 4' x 6'-6" sewer tunnel and intercepted at the Richmond-Sunset Sewage plant.

The station is fully automatic in operation with an operator in charge from 8:00 A.M. to 4:00 P.M., Monday through Saturday, to attend to general maintenance and necessary repairs to the equipment. Equipment includes two 4 inch horizontal single stage pumps, each rated at 650 G.P.M. against a total dynamic head

of 100 feet, with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 25 H.P. Motor at 1750 R.P.M. There is also one 5 inch pumping unit consisting of two 5 inch horizontal single stage pumps connected in series each rated at 1400 G.P.M. against a total head of 140 feet, with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 40 H.P. Motor at 1150 R.P.M. One of the smaller pumps is of sufficient capacity to take care of the normal sewage flow.

During storms, as the level in the sump rises, the second smaller pump will automatically start pumping along with the first pump, and if the level in the sump continues rising above a predetermined point the automatic controller will shift position. The controller in the new position will shut down the two smaller pumps and at once start up the unit consisting of two 5 inch pumps in series. The duration of the period of which this larger unit operates is predetermined by an electric clock and if the duration of the rainstorm continues beyond the predetermined setting, the time clock will shut the pumps off completely, by-passing the entire flow to an ocean outfall.

VICENTE PUMPING STATION

Vicente Pumping Station is located on the Great Highway at Vicente Street and was placed in operation in 1928 to relieve pollution of the Ocean Beach in the vicinity of Fleischacker Pool and to the north. With the exception of drainage water and storm water from Fleischacker Pool, the flow is sanitary only.

This pumping station serves the district bounded on the north by Rivera Street, on the east by 46th Avenue, on the south by Sloat Boulevard and on the west by the Great Highway. The sewage is pumped through a 10 inch diameter force main to Ulloa Street and 46th Avenue, where it discharges into a 7 foot circular concrete sewer and is intercepted at the Richmond-Sunset Sewage Treatment Plant.

The station is fully automatic in operation with no permanent operator assigned but with regular inspection made to assure efficient operation and maintenance. Equipment includes two 6 inch vertical single stage pumps rated at 900 G.P.M. against a total dynamic head of 56 feet, with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 25 H.P. motor at 870 R.P.M.

A record of operation of all pump stations is provided in the Appendix of this Report.

GAS SURVEY UNIT

A gas survey crew was organized in November, 1951 in a program to examine all sewer manholes in the City for the presence of dangerous gases. With the detection of toxic or explosive gas, action is immediately taken to find the cause or source and to

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remove the dangerous mixture by proper ventilation. The end results of the program will protect the sewer workers, private citizens and private property from injury or damage which would be caused by inhalation or by explosion.

A description of the operations of this crew follows:

SAMPLING PROCEDURE

A one-half ton panel truck is used to carry the test equipment and a crew consisting of a sewer cleaner, a laborer and an engineering chemist. The sewer cleaner drives the truck to a position alongside a manhole; The laborer is stationed in back of the truck with a red flag to direct traffic around the vehicle while the engineering chemist conducts the sampling. The sampling hose is placed in a ventilation hole in the manhole cover to a depth of approximately 6 feet. The first test made is for carbon monoxide (CO) using the portable A.C.-D.C. carbon monoxide indicator. While this test is made, a 3 x 5 file card is made out containing the date, time, location of manhole and results of tests. The second, third and fourth tests are for hydrogen sulphide (H₂S), explosive gases and oxygen deficiency, respectively. After the above tests are completed, the sampling hose is raised to within a foot from the top of the manhole and another test for carbon monoxide and explosive gases is taken. It is only necessary to make one test for carbon monoxide, but since the instrument contains an electrical driven gear pump, it is used as the first test at the 6 foot and 1 foot level merely to purge the sampling hose of the previous air sample. This saves a considerable amount of time and is much faster than purging the hose using a rubber aspirator bulb. After all the tests have been completed, the cover is removed from the manhole and it is inspected for clogged pipes, sludge, dirt, loose bricks, etc.

If a manhole shows any indication of explosive gases or vapor, an investigation is made to determine what type of gas or vapor is present by smelling the air sample as it is pumped through the aspirator bulb. Most chemical vapors can be distinguished from each other by their characteristic odor.

Natural gas also has a very distinct odor, but it is usually masked by other odors in the sewer unless there is a large quantity of gas present.

If the explosive gas in the manhole has an odor of a chemical vapor, all the side sewer vents in the vicinity of the manhole are tested with the explosimeter to determine which establishment is discharging the chemical in the sewer. The name and address of the firm and the type of chemical present is listed on the back of the file card along with the location of the manhole.

If the explosive gas is not of a chemical nature and there is no odor of natural gas present in the manhole, then all the

water meter boxes on the sidewalk in the vicinity of the manhole are tested with the explosimeter. When there is a leak in a gas pipe, the gas seeps through the ground and usually accumulates in the water meter boxes. The meter box with the highest explosive gas content usually indicates there is a gas leak near the area. As the gas travels through the ground, the earth filters out the heavy chemical which is mixed with the gas to give its characteristic odor. That is why the dirt removed from a hole near a gas leak has a dark color and a very strong odor of natural gas. Natural gas without the chemical odorant present is practically odorless and this makes it rather difficult to detect by sense of smell.

Any manhole containing explosive gas which is suspected to be coming from a gas leak is immediately reported to the Pacific Gas & Electric Company. The Company sends one of their leak crews to make temporary repairs until a more permanent repair can be made. The leak is usually repaired on the same day they are notified since all the leak repair trucks are equipped with two-way radio telephones.

A record is kept each day of the number of manholes tested and the results of the tests. At the end of each month a report is made showing the total number of manholes tested for that period and also the location of manholes containing explosive gases, carbon monoxide, hydrogen sulphide and oxygen deficiency. An explosive manhole is shown on the monthly report until the dangerous condition has been remedied.

At the end of each day colored pins, which represent the different gases for which tests are made, are placed on a large scale map of the City. A yellow pin designates a manhole containing hydrogen sulphide, a white pin designates carbon monoxide, a black pin designates oxygen deficiency, a green pin designates explosive gases between 3 and 20%, and a red pin designates explosive gases over 20%. This map is located in the assistant superintendent's office and the sewer maintenance crews are directed to look at the map and see if any of the manholes in the area in which they are working contain any explosive or poisonous gases.

TEST EQUIPMENT

The instruments used in conducting the tests and a brief description of their operation follows:

1) Mines Safety Appliance (MSA) Hydrogen Sulphide Detector. This instrument is used to detect hydrogen sulphide gas (H_2S) and consists of a small inlet barrel corrugated at one end to permit the attachment of a rubber hose. The other end of the barrel is attached to a rubber aspirator bulb, a movable scale, and a tube containing a white granular chemical. The tubes contain silver cyanide ($Ag\ CN$) 2) and an activated alumina (AL203) the latter

Maintenance and Operation

serving as a carrier. The reaction of the silver cyanide in the presence of hydrogen sulphide turns the white granules to a dark gray, beginning at the inlet of the tube. The amount of discoloration, as read from the scale, indicates the amount of gas present.

The test consists of attaching one end of a sampling hose to the detector and placing the other end of the hose in a ventilation hole of the manhole cover. The aspirator bulb is squeezed 10 times and allowed to expand completely each time. The percent or parts per million of hydrogen sulphide is read on the scale midway between the longest and shortest gray discoloration of the detector tube.

Two types of tubes are available, a red tip tube which reads from 0 - 50 parts per million or a green tip tube which reads from 0 - 400 PPM. The tubes may be stored for long periods of time without any effect on their sensitivity. Other gases and vapors, such as carbon monoxide, carbon dioxide, natural gas, gasoline, benzol ethyl and methyl alcohol, do not produce a color change.

2) Mine Safety Appliance (MSA) Colorimetric Carbon Monoxide Tester. This instrument is used to detect carbon monoxide and has an inlet barrel for attaching a sampling hose, a colorimetric indicator tube, a rubber aspirator bulb and a comparison color tube having six permanent colors graduated from 0 - 0.1% of carbon monoxide. The permanent color tube is used as a comparison standard for matching the indicator tube color with that of the standard. The chemical inside the indicator is called hoolamite which is activated iodine pentoxide (I_2O_5). On contact with carbon monoxide, the hoolamite in the tube changes color from a bright yellow to green, then to bluish green and finally to a dark blue, depending on the concentration of the gas. Free iodine (I_2) is liberated during the reaction.

To test for carbon monoxide gas, the rubber sampling hose is attached to the inlet of the tester and the bulb is squeezed 1, 2 or 5 times, allowing the bulb to completely expand after each squeeze, then the color of the indicator tube is compared with that of the permanent color tube and the percent carbon monoxide is read after the figure of the number of times the bulb was squeezed.

The indicator tubes should be kept warm before and during the test in cold weather. The tubes should be stored in a dark place and may be used up to 1 hour after opening the sealed ends. The indicator tube starts to turn color after approximately 1 hour exposure to the atmosphere. Gases and vapors such as acetylene, alcohol, ammonia, benzene, ether, ethylene, gasoline, hydrogen sulphide and natural gas containing higher hydrocarbons, discolor the hoolamite when no gasorbent is used between the sampling hose and the tester. The gasorbent is merely a tube filled with acti-

vated charcoal which removes the contaminating vapors. Carbon dioxide, hydrogen, methane and carbon tetrachloride have no effect on the hoolamite.

3) Mine Safety Appliance (MSA) Carbon Monoxide Indicator (Type DS 9141). This instrument is used for the detection of carbon monoxide and is operated from a 6 Volt A.C. or D.C. source. The principal parts of this detector consists of a manometer, cannister, reaction cell, thermacouple, millivolt meter, gear pump and motor. The gas sample first passes through a flow meter consisting of an orifice and a manometer which is used to maintain constant flow. The flow rate may be varied by an adjustment of a needle valve located near the gear pump. The sample then passes through a dehydrating cannister to remove any moisture. From the cannister, the sample enters a cell containing a catalyst known as hopcalite. In the cell, the carbon monoxide (CO) is oxidized to carbon dioxide (CO₂) by the catalytic action of the hopcalite and the heat liberated by the oxidation is proportional to the amount of carbon monoxide present and is measured by a thermacouple in series with a millivolt meter. From the cell, the sample passes through the gear pump and out the exhaust valve.

The only maintenance required is to oil the motors and gear pump occasionally, change the active hopcalite in the cell after every eight hours of operation, and change the inactive hopcalite and cannister after every twenty hours of operation.

The test consists of attaching the sampling hose to the inlet and turning on the motor switch. The amount of carbon monoxide present is read on a meter which reads from 0 - 0.15% of carbon monoxide gas.

No information is available if other gases effect the readings of this instrument.

4) Mine Safety Appliance (MSA) Explosimeter Model 2.

This instrument is used for the detection of methane (CH₄), natural gas, and combustible vapors such as gasoline, alcohol, paint thinners, etc. Tests are made by drawing the sample of the atmosphere to be tested over a platinum catalytic filament which forms part of a balanced wheatstone bridge circuit. The current for this bridge is provided by six size D flashlight cells connected in parallel. Combustible gases or vapors in the sample are burned on the filament which raises its temperature and increases its resistance in proportion to the concentration of the combustibles in the sample. The resulting unbalance of the bridge circuit causes a deflection on a meter scale which indicates the amount of combustible gases or vapors in the sample. The meter scale is calibrated from 0 - 100% and the lower explosive limit of methane or any combustible gas or vapor is a ratio of gas to air mixture which will explode when ignited. Explosive limits

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are expressed in percent. As an example, the explosive limit of methane gas is 5 - 15%. This means that a given volume of air containing from 5 - 15% methane gas will explode when ignited. The 5% represents the lower explosive limit and 15% represents the upper limit. An explosimeter reading of 60% on the meter scale means that the air sample contains 60% of the 5% lower limit of methane gas. Hence, the air sample contains 3% methane gas and 97% air. A scale reading of 100% or more would indicate that the sample contained from 5 - 15% of methane gas. Any sample which causes the meter pointer to move rapidly across the scale and quickly return to a position within the scale range or below zero is an indication that the concentration of the gas is above the explosive limit (15%).

When it is necessary to estimate concentration of gases above the upper explosive limit, a dilution valve may be employed which dilutes the sample with one, two, three, four or more equal parts of air. This is merely a comparison method to obtain 'on scale' readings and is not very accurate.

Once or twice a month the explosimeter is taken to the Pacific Gas & Electric Company for calibration checks. The company maintains a large tank filled with a 5% mixture of natural gas and air and it is used to check the combustible gas indicators used by the company for detecting leaks and testing manholes. If the explosimeter is working properly, a scale reading of 100% should be obtained when a sample is taken from the tank.

5) Mine Safety Appliance (MSA) Koehler Flame Safety Lamp).

This lamp is used to detect an oxygen deficiency in manholes and also can be used to detect methane gas. The lamp is constructed like an ordinary kerosene lamp except that it has two copper wire screen gauzes placed over the flame which prevent the flame from igniting any surrounding explosive mixture in which it is placed. The lamp is unsafe, however, in atmospheres containing hydrogen or acetylene.

The lamp uses a special refined naphtha or lighter fluid as fuel and will burn for 8 hours on one filling. Other fuels cause smoke which clogs the gauze screens and extinguishes the flame.

The test consists in attaching the sampling hose to the lamp and aspirating the air sample into the mantle near the base of the flame. If the flame is extinguished, there is an oxygen deficiency in the manhole. The lamp will not burn in an atmosphere containing less than 16% oxygen.

6) Sampling line

The line consists of a 5½ foot piece of ¼ inch I.D. pipe and 15 feet of non-collapsible ¼ inch I.D. rubber hose attached to

one end. The pipe has twelve 1/16 inch holes drilled at right angles to the pipe. Four holes are drilled 4 inches from the bottom of the pipe, four more 6 inches from the bottom, and four more at 8 inches from the bottom. These holes prevent any water from being sucked into the sampling hose which would damage the test equipment in case the sampling line is accidentally placed in the sewage in the bottom of the manhole. A trap is also attached to the other end of the hose to collect any water in the event that small holes in the pipe become clogged. A flashback arrestor is attached between the water trap and the test equipment to prevent any accidental ignition of the explosive gases in the sampling hose and manhole.

7) A ½ ton White Horse Panel Truck is used to carry the crew and the equipment. The truck is painted red and is equipped with red flags and a flashing red light.

SAFETY LIMITS OF GASES TESTED

Hydrogen Sulphide (H_2S) has an odor of rotten eggs, is colorless, and is the product of the decomposition of sulphur compounds. This gas is most likely to be found at the bottom of manhole since its density is greater than air at 1 atmosphere and $0^{\circ}C$. Its lower and upper explosive limit is 4.3 - 46% and it is very poisonous. The exact lower safety limit of hydrogen sulphide concentration at which it does not cause poisoning symptoms is not known, but it is evidently less than 0.005% (50 ppm). Even low concentrations (0.01%) may cause death after long exposure.

Concentrations of from 0.06 - 0.1% can cause serious symptoms within a few minutes. The maximum concentration for 60 minutes of exposure without serious disturbances is from 0.02 - 0.03% and for 8 hours of exposure it is 0.002%.

Large concentrations of hydrogen sulphide (0.01%) impair the sense of smell and the odor associated with this gas is of little value as a means of detection.

Carbon monoxide is a colorless, odorless, tasteless, non-irritating, poisonous gas and is a product of the incomplete combustion of carbonaceous materials. The gas is combustible but will not support combustion. Its explosive limit is from 12.5 - 74% and is usually found near the top of the manhole since its density at 1 atmosphere and $0^{\circ}C$ is slightly less than that of air. The maximum concentration for 60 minutes of exposure without serious effects is 0.04% and for 8 hours of exposure it is 0.01%.

Oxygen deficiency is a depletion of oxygen from poor ventilation or the absorption or chemical consumption of the available oxygen. Normal air contains about 21% oxygen and man can tolerate a concentration as low as 12% but the minimum concentration for eight hours of exposure without ill effects is from 14-16%. Concentrations below 10% are dangerous to human life and

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are likely to be fatal.

The flame in a flame safety lamp extinguishes at a concentration of 16% oxygen or lower.

Methane is a colorless, odorless, tasteless, non-poisonous gas and is normally found near the top of the manhole since its density at 1 atmosphere and 0°C is almost half that of air. There is probably no limit to the amount a man can tolerate provided there is sufficient oxygen present to support life. The explosive limit of methane is 5 - 15% and this gas has been the cause of numerous explosions in sewers, disposal plants and mines.

Gasoline vapors are usually found near the bottom of the manhole and have a very distinct odor. Its density at 1 atmosphere and 0°C is almost 3 to 4 times that of air. The vapor has an anesthetic effect when inhaled. Concentrations of 2.4% are rapidly fatal and concentrations of 1.1 - 2.2% are dangerous for short exposures. The explosive limit of gasoline is from 1.3 - 6%. The fact that the lower limit of gasoline is only 1.3% has accounted for several explosions in manholes in other cities.

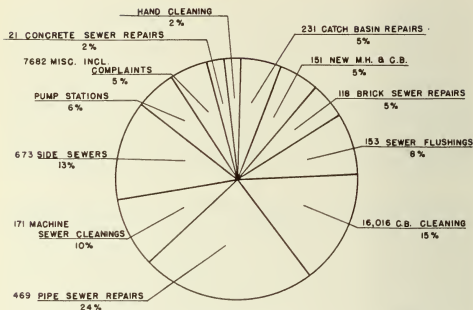
Natural gas mostly contains methane and smaller amounts of hydrogen (H₂), ethane (C₂H₆), propane (C₃H₈) and other heavier members of the paraffin series. For all practical purposes, the explosive limit and density of natural gas is the same as methane.

Since the explosimeter is calibrated for only methane gas, it is impossible to determine accurately the concentrations of chemical vapors such as gasoline, ether, alcohol, etc., unless one has a calibration curve for each chemical. Therefore the lower explosimeter reading for all combustible gases and vapors has been set at 20%. Another reason why this figure is used is that some chemical vapors are absorbed by the rubber sampling hose or condense on the inside wall of the sampling line. Also, leaded gasoline vapors poison the platinum filament wire and cause all the explosimeter readings to read lower than they actually should, regardless of the gas being tested.

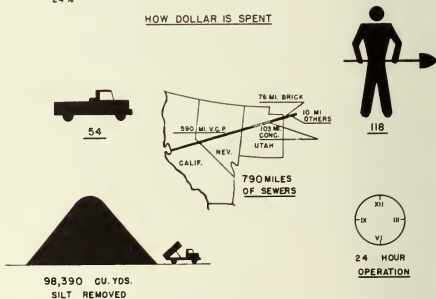
RESULTS OF TESTS

During the fiscal year from July 1, 1952 to June 30, 1953, approximately 7,154 manholes have been tested; 871 manholes, or 11.4%, contained explosive gases in concentrations from 3 - 20% which were not considered dangerous; 101 manholes, or 1.4%, contained dangerous concentrations of explosive gases over 20%; 79 manholes, or 0.9%, contained concentrations of carbon monoxide below 0.02%; and 14 manholes indicated a deficiency of oxygen. In all our tests, only one manhole showed a slight trace of hydrogen sulphide.

Maintenance and Operation



HOW DOLLAR IS SPENT

BUREAU OF
SEWER REPAIR

SEWER REPAIR CHART

Maintenance and Operation



SEWER SURVEY & GAS DETECTION UNIT
Testing for Explosive and Toxic Gas



BROADWAY TUNNEL
Cleaning Tile

Maintenance and Operation

OPERATING EXPENSE

The cost of operation for the fiscal year was based on the actual time that was spent in making tests and did not include time that was spent in the maintenance shop for truck repairs, drainage reports, other tests made at the scenes of explosions, and miscellaneous tests. The actual number of working days spent on the survey was 208 days and the expenditures were as follows:

Sewer Cleaner (\$19.80 per day)	\$ 4,118.40
Laborer (\$16.80 per day)	3,494.40
Chemist (\$15.56 per day)	2,994.20
Supplies for Equipment	105.78
Repairs to Truck No. 417	390.65
Gas & Oil	169.80
Tires & Misc. Expenses	70.00

TOTAL \$11,343.23

The cost per manhole was \$1.59.

BUREAU OF STREET REPAIR
Fred D. Brown, Superintendent

GENERAL

In the early days of San Francisco, it appears that all matters pertaining to the City's streets were under the jurisdiction of the Superintendent of Streets, Highways and Squares.

The charter of 1900 created the Department of Public Works and placed it under the management of three Commissioners known as the Board of Public Works. The Board became the successor in office to and assumed all the powers and the duties of the Superintendent of Streets, Highways and Squares as well as of certain commissions then existing. The 1900 charter enumerated many other duties of the Board but stressed the fact that it was custodian of all matters pertaining to streets.

The charter of 1932 terminated the Board of Public Works and placed the department in charge of a director. It provides that 'the director of public works shall have and succeed to the powers and duties of the board of public works***except as otherwise provided***'.

It appears that the Superintendent of Streets, Highways and Squares was responsible for all work of any kind within street areas. While the Board of Public Works was given these responsibilities under the charter of 1900 and the Director of Public Works virtually the same responsibilities under the charter of 1932, provision was made for delegating them to bureaus within the department. With certain exceptions, provision was made for

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assigning or reassigning the various duties among the various bureaus.

Other than the routine maintenance and repair of the City's streets and appurtenances and the maintenance and operation of bridges and tunnels, the duties of the Bureau of Street Repair are rather indefinite.

The activities of the Bureau are presently financed by monies from gas tax and it is called upon to perform most any task for which the use of such monies is legal. Activities are, however, further limited by provisions of the City's charter; principally the \$2000 limitation of expenditure on any one job and the limiting of work on unaccepted streets.

The Bureau does, however, perform work for other departments but is reimbursed for the cost of such work by the department served.

The Bureau maintains and repairs all streets accepted by the Board of Supervisors for maintenance by the City. This includes virtually all public travelways, once properly improved, other than certain freeways and waterfront streets under the jurisdiction of the State Highway Commission or the State Harbor Commission. There are in excess of 800 miles of such accepted streets.

FUNCTIONS

More specifically, the functions of the bureau are the repair of defects in accepted streets, gutters and curbs; the maintenance and repair of structures in street areas, such as retaining walls, stairs, guard rails and fences; the construction of drains necessary to streets; the clearing of slides and abnormal litter from streets; maintenance of city dumps; maintenance and operation of three lift bridges and one tunnel.

By order of the Director of Public Works the Bureau performs other work such as construct 'islands' and install raised pavement bars for traffic channelizing, remove abandoned traffic strips, maintain certain planted areas and, as stated before, almost any task for which the expenditure of gas tax monies is legal, is an obligation of the City and can be done within charter provisions.

The Director can and does order the Bureau to perform emergency work to protect the City and/or the public in case of an emergency. The most frequent use of this authority is in connection with slides, washes and other damage due to winter storms.

The Bureau also performs work for other departments; such as paving in track areas for the Municipal Railway, paving over side-sewer trenches for the Bureau of Sewer Repair, and doing other miscellaneous asphalt and concrete paving.

ORGANIZATION & ADMINISTRATION

Under the general supervision of the superintendent, the work of the Bureau is performed by two main divisions; Street Repair and Bridge and Tunnel Maintenance and Operation.

The maintenance and operation of the bridges and tunnel is directly supervised by John Donaldson, Chief Operating Engineer, whose part time services are secured from the Bureau of Building Repair.

Street repair work is divided among Asphalt, Concrete and Sealing divisions, the asphalt plant and miscellaneous assignments.

The Asphalt Division, under the supervision of General Foreman John Barry, consists of six asphalt working crews, two compressor crews and one cleanup crew for paving work and one crew for special assignments.

The Concrete Division, under the supervision of General Foreman Thomas Breslin, consists of one crew for the repair of brick and masonry, three concrete working crews, one crew for resetting curbs, one for redressing stone curb, one for breaking pavement, etc., two cleanup crews, one materials delivery truck and one truck for tending of lights and barricades.

The Sealing Division, under the supervision of General Foreman Wilfred Balk, consists of four crews especially equipped for sealing cracks. Minor surface sealing and patching are also done by these crews.

Mr. Balk is also the Bureau's safety engineer and coordinator of special activities.

The asphalt plant and crew are under the direct supervision of Foreman Charles McFadden.

The 1952-1953 budget provided for several employments for Interdepartmental Service. This service included the maintenance and repair of major streets, payment for which was made from the Special Gas Tax Street Improvement Fund, as well as work actually performed for other departments. This involved the use of monies that could well be used for other purposes and necessitated a considerable amount of interdepartmental procedure within the department. Furthermore, due to the City's recent track removal program, the amount of work required by the Municipal Railway has been reduced to a small part of its former volume. These conditions made it desirable to eliminate the interdepartmental provisions and make similar provisions in the regular bureau budget. Salary amendment and appropriation ordinances to this effect were passed by the Board of Supervisors April 6th and approved by the Mayor April 8, 1953.

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FUNDS

The Bureau's budgeted funds are appropriated from a Special Road Improvement Fund. Prior to the previously mentioned elimination of Interdepartmental Service provisions, funds were also received from a Special Gas Tax Street Improvement Fund. Street work for the Municipal Railway and off-street work for other departments is authorized and paid by quarterly or individual work order.

The Special Road Improvement Fund and the Special Gas Tax Street Improvement Fund were created to conform with provisions of the 'Collier-Burns (State) Highway Act of 1947'; 'An act to provide for a system of public streets and highways in this State and for the financial support thereof, including the levying of taxes therefore***'.

The act provides that certain motor vehicle fees be paid into a Motor Vehicle Fund and that motor fuel taxes be paid into a Motor Vehicle Fuel Fund. After certain deductions, these funds are transferred to a Highway Users Tax Fund from which they are apportioned to the Counties' Special Road Improvement Funds and the State Highway Fund.

Law provides that certain fines and forfeitures resulting from vehicle code violations be paid into the Counties' Special Road Funds and permits the counties to augment their funds with any other monies available for the purpose. Receipts from the State for work performed by the City on State Highways within the City and certain other 'recoverable' monies are also paid into the Special Road Improvement Fund.

Certain portions of the fund are restricted to certain uses. Generally speaking, however, it can be used for any county road purpose.

The Special Gas Tax Street Improvement Fund is composed of the City's share of a designated portion of the motor fuel tax paid into the State Highway Fund for use on city streets. A portion of this fund must be used for new construction; the remainder may be used for maintenance and repair. Work financed from this fund is limited to that portion of the street available for use by vehicular traffic, pedestrian underpasses or overhead crossings and traffic control devices.

The City's major and secondary street systems are also its primary and secondary county road systems. All maintenance and repairs by the Bureau of Street Repair will, at least in the immediate future, be financed from the Special Road Improvement Fund.

Maintenance and Operation

WORK PERFORMED

General street repair, during 1952-1953, included the following major items:

Machine resurfacing	2,147,300	sq. ft.
Hand resurfacing	655,100	sq. ft.
Repairs, hot asphaltic mixtures	970,700	sq. ft.
Repairs, emulsified asphalt Armor coat	273,300	sq. ft.
Cracks sealed	1,235,800	lin. ft.
Brick and concrete pavement	3,200	sq. ft.
Concrete sidewalk	32,000	sq. ft.
Concrete and granite curb	18,700	lin. ft.
Granite curb redressed	8,400	lin. ft.

Work performed for other departments, including work on major streets and State highways included the following major items:

Machine resurfacing	524,900	sq. ft.
Hand resurfacing	119,100	sq. ft.
Patches, hot asphaltic mixtures	422,600	sq. ft.
Patches, emulsified asphalt armor coat	40,300	sq. ft.
Cracks, sealed	297,400	lin. ft.
Brick and concrete pavement repairs	3,400	sq. ft.
Concrete and granite curb	4,400	lin. ft.
Pavement repairs for Municipal Railway	49,700	sq. ft.
Pavement of sidesewer trenches	21,600	sq. ft.

The asphalt plant produced 37,039 tons of asphaltic mixtures for an average of \$4.74 per ton for labor, material and plant charges. Four hundred twenty nine tons were by work order from the Municipal Airport.

Comparison with previous years does not reveal any outstanding changes other than 'machine resurfacing', pavement repairs for Municipal Railway' and asphaltic mixtures ordered by the Municipal Airport.

The Adun paving machine, put into service in July 1952, has allowed a tremendous improvement in the bureau's resurfacing work; not only in quality, but in quantity. The above tabulations show that 2,672,200 square feet of pavement were resurfaced by use of this machine. This, together with the 774,200 square feet resurfaced by hand, makes a total of 3,446,400 square feet resurfaced during the year. A comparative quantity is not available for 1951-1952 but a fair estimate is less than 2,500,000.

Funds for the purchase of materials were insufficient to the extent that the paving machine could be used only a little more than seven months. The machine is capable of placing more mixture than the present asphalt plant can produce. However, sufficient trucks were not always available to take full advantage of the plant's limited capacity.

Maintenance and Operation

The cost of machine resurfacing averaged approximately 5.5 cents per square foot. Hand resurfacing in 1951-1952 cost 8.2 cents per square foot; equivalent to 8.7 cents in 1952-1953.

Hand resurfacing in 1952-1953 cost approximately 9.0 cents per square foot but the type of work is not comparable to that performed in 1951-1952. As the paving machine was used for most of the 'open' work the hand work included a greater proportion of more difficult jobs; narrow streets, steep hills, etc.

The decline in the quantity of repairs made for the Municipal Railway is due to the recent track removal program. The 49,700 square feet repaired in 1952-1953 should be compared with 174,600 in 1951-1952 and 1,019,800 in 1946-1947.

When an airport runway is closed for repairs it must be re-opened as quickly as possible. The Municipal Airport maintenance force found that they could not depend upon nearby sources for asphaltic mixtures required nor could it always be obtained when wanted. Runway and crew time saved more than justified the additional haul from the Municipal asphalt plant.

RECEIPTS & EXPENDITURES

The 1952-1953 budget and supplemental appropriations provided \$1,302,049.59 for general street repair and \$143,219.68 for the maintenance and operation of the bridges and tunnel. Of these amounts the Bureau expended \$1,238,834.89 and \$134,598.46 and returned to the Special Road Improvement Fund \$63,214.70 and \$8,621.22, respectively.

Work was performed for other departments, including work on major streets and State highways, in the amount of \$159,063.44.

PERSONNEL

W.S. Merrill, Superintendent of the Bureau, retired during the year after forty years in the City's service. Many improvements were made under his supervision; many of his objectives are yet to be attained.

Others lost to the Bureau during the year were:

Bruce Barton	Asphalt Worker	Deceased
Daniel Burke	Asphalt Worker	Retired
J. Komisar	Watchman	Retired
J.J. Fenton	Operating Engineer	Deceased

The number of employments in the Bureau varied considerably during the year. Due principally to the decrease in the amount of work required by the Municipal Railway, funds were insufficient to keep all Interdepartmental positions filled. Watchmen were eliminated at the Islais Creek bridge and reassigned to the Broad-

RECEIPTS AND EXPENDITURES

STREET REPAIR

	Budget	Transfers & Supplemental	Total	Expended	Encumbered	Total	Returned to Road Fund
Personal Services, Perm.	\$ 34,168	\$ 200.00	\$ 34,168.00	\$ 32,947.82	\$	\$ 32,947.82	\$ 1,220.18
Overtime			200.00	80.28		80.28	119.72
Holiday Pay	466		466.00	373.71		373.71	92.29
Personal Services, Temp.	488,196	59,605.12	547,801.12	502,489.09		502,489.09	45,312.03
Wages	9,900	2,260.00	12,160.00	12,060.30		12,060.30	99.70
Sick Leave		1,210.81	1,210.81	1,210.81		1,210.81	
Retrospective Pay	41,396	-1,000.00	40,396.00	26,385.93	\$ 10,479.71	36,865.64	3,530.36
Contractual	35,500	3,600.00	39,100.00	36,819.62		38,819.62	280.68
Truck Hire	34,923	8,992.92	43,915.92	42,327.68		42,327.68	1,588.34
Automotive	2,900		2,900.00	2,522.57		2,522.57	377.43
Heat, Light & Power	1,125		1,125.00	1,125.00		1,125.00	
Physician's Service	128,000	-1,000.00	127,000.00	118,782.61	4,619.06	123,401.67	3,598.33
Materials & Supplies	12,750	1,000.00	13,750.00	13,729.27		13,729.27	20.73
Gasoline & Oil	16,600		16,600.00	15,376.77	211.55	15,588.32	1,211.68
Equipment	315,000		315,000.00	24,031.54	290,568.46	315,000.00	
Improvements	4,000		4,000.00	4,136.44		4,136.44	-136.44
Field Charges	8,626	3,527.74	12,153.74	8,424.54		8,424.54	5,729.20
Retirement Allowance							
Services of Other Dept.	8,083		8,083.00	8,083.00		8,083.00	
TOTALS	\$1,223,653	\$78,396.59	\$1,302,049.59	\$932,556.11	\$306,278.78	\$1,238,834.89	\$63,214.70

* Includes unexpended portion of appropriation for new asphalt plant.

** Includes \$14,217.86 for Bridge & Tunnel and \$4,839.06 for other Bureaus; \$68,367.62 for Street Repair.

BRIDGES AND TUNNEL

Personal Services, Perm.	\$101,467	\$ 3,601.68	\$ 105,068.68	\$104,897.46	\$	\$ 104,897.46	\$ 171.22
Overtime	3,100		3,100.00	3,367.16		3,367.16	17.84
Holiday Pay	3,000	400.00	3,400.00	3,367.08		3,367.08	32.92
Personal Services, Temp.	4,789	1,700.00	6,489.00	6,047.02	\$ 985.00	6,047.02	441.98
Contractual	5,195	-200.00	4,995.00	1,524.35		2,509.35	2,483.05
	1,000		1,000.00	400.97	30.00	430.97	69.03
Heat, Light & Power	3,200	7,000.00	10,200.00	7,166.31		7,166.31	3,033.69
Materials & Supplies	450	5,100.00	5,550.00	1,477.36	1,788.07	3,265.45	2,284.55
Equipment		980.00	980.00	947.66		947.66	32.34
Retirement Allowance*	(14,235)		(14,235.00)	(14,235.00)		(14,217.86)	(17.14)
Services of Other Dept.	5,919		5,919.00	5,919.00		5,919.00	
TOTALS	\$125,138	\$18,081.68	\$143,219.68	\$131,795.39	\$ 2,803.07	\$ 134,598.46	\$ 8,621.22

* Included in Street Repair Budget and Report.

INTERDEPARTMENTAL

Interdepartmental

\$ 159,063.44

Maintenance and Operation

way Tunnel. Additional operating engineers were also necessary for the tunnel.

The number of positions provided and the number filled, as of various dates, are shown on a separate page.

EQUIPMENT

During the year the Bureau acquired a tractor-loader, a compressor (125 c.f.m.) and a dump truck (28,000 G.V.W.).

The dump truck was put into service for general hauling. It will be of greatest value when transporting mixed materials from the asphalt plant to the paving machine.

The Bureau had four compressors (105 c.f.m.) so mounted on trucks that they could not be easily removed. Mountings will be revised, as required, so that when it becomes necessary to repair or overhaul a compressor it can be lifted off and replaced with another. The new compressor will provide a spare for the purpose and will prevent much lost time.

Prior to securing the tractor-loader, all loading was done by hand. It is needless to say that the loader will save a great amount of time and labor.

In selecting the loader, the prime requisite was its maneuverability. Most of the Bureau's work being in streets, it is desirable to operate equipment that will not interfere with traffic any more than necessary. The 'Scoopmobile' purchased, a product of Mixermobile Manufacturers, is not only an excellent loader but can be turned around within a twelve foot space.

A paving machine purchased during 1951-1952 was put into service July 28, 1952. It has greatly improved the quality and increased the quantity of resurfacing done by the Bureau.

A complete list of major equipment operated by the Bureau is:

4 Power Rollers	1 Tractor-loader
1 Tractor & Bulldozer	1 Skid mounted compressor
1 Power Grader	1 Paving machine
1 Tractor Crane	1 Tractor Surface Heater
1 Tractor Sand Loader	6 Spray Machines
4 Trucks with compressors and special equipment	1 Concrete Saw
4 Trucks with compressors	1 Trailer Mounted Compressor
26 Trucks of various types and sizes	1 Tip Trailer
	8 Trucks & Drivers (rented)

BRIDGES AND TUNNEL

The Bureau has been responsible for the maintenance and operation of the lift bridges for many years. Responsibility for the Broadway Tunnel was added when it was opened to traffic in December 1953.

Until recently an operating engineer and a watchman have been kept on duty at each bridge at all times. The value of the watchmen's service is questionable and, during the year, was eliminated at Islais Creek where the operator has good vision of both ends of the bridge. Contemplated improvement of traffic control devices at the other bridges may permit elimination of watchmen entirely.

Tentative plans have been made for closing the Fourth Street Bridge to channel traffic during the hours between 8 PM and 4 AM. Bridge openings during those hours have averaged only slightly more than one per month.

The elimination of watchmen at Islais Creek will effect an annual saving of approximately \$18,700. Closing the Fourth Street Bridge to channel traffic eight hours each night would effect an annual saving of approximately \$15,500. Savings estimates are based on 1953-1954 salary rates.

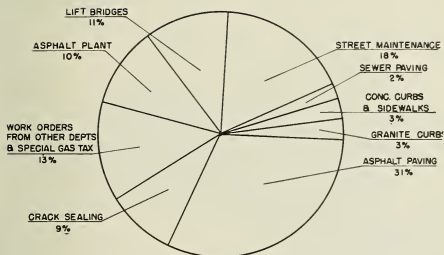
The Broadway Tunnel consists of two parallel tunnels, each 1616 feet long, generally referred to as the north bore and the south bore. The north bore accommodates two lanes of west bound traffic and the south bore accommodates two lanes of east bound traffic. There is a sidewalk for pedestrians in each bore.

Tunnel ventilation is of major interest and the maintenance and operation of the ventilating systems is the prime duty of the operating engineer or watchman kept on duty at all times.

North bore ventilation is provided by two blowers, housed at the east end, capable of delivering a total of 300,000 cubic feet of air per minute; south bore ventilation is provided by two blowers capable of delivering a total of 106,000 cubic feet of air per minute. Though the two systems are independent of each other, they are controlled from a central station located in the east ventilation building.

Air is continuously drawn from two locations in each bore and analyzed automatically. Blowers are normally automatically controlled and operated at various combinations of speed and number according to the concentration of carbon monoxide being recorded. The 'concentration' is referred to as the number of parts of carbon monoxide in 10,000 parts of air. One blower goes into operation at slow speed when the concentration reaches '1'. If the tunnel air is not cleared within a predetermined time, pre-

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HOW DOLLAR IS SPENT



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BUREAU OF
STREET REPAIR

BUREAU OF STREET REPAIR

Maintenance and Operation



NEW ADNUN PAVING MACHINE
Placed in Operation July 28, 1952



NEW SCOOPMOBILE TRACTOR-LOADER
Placed in Operation April 24, 1953

Maintenance and Operation

sently set at seven minutes, the second blower goes into operation at slow speed. A concentration of '4' is considered the danger point. If this degree of concentration should occur, not only would both blowers continue to operate at fast speed but a signal would be sounded and traffic controls automatically set to prevent traffic from entering the tunnel.

Carbon monoxide concentrations are noticeably affected by wind direction and velocity. The prevailing westerly wind tends to clear the south bore, where it works with the traffic and the blowers. In the north bore the wind works against the traffic and blowers with tendency to intensify the concentration. Chart recordings show that when the concentration is highest in the north bore, it is usually very low in the south.

Records show that blowers at the east end operated a total of 209.7 hours at slow speed and 6.0 hours at fast speed during the 181 days from January 1st to July 1st. At the west end, during the same period, the blowers operated 67.8 hours at slow speed and 6.3 hours at fast speed. Equivalent time percentages are approximately; north bore, 4.83% at slow speed and .14% at fast speed; south bore, 1.56% at slow speed and .145% at fast speed. The major portion of these times is on account of opposing afternoon winds in the north bore and heavy morning rush hour traffic in the south bore.

The general patterns of the north bore analyzer recordings show that the carbon monoxide concentration is nil until 7 AM, fluctuates between '0' and '.5' from 8 AM until noon, holds around '.2' to '.3' from noon until 10 PM at which time it recedes to '0'. In the south bore it is nil until 6 AM, rises to '1' by 8 AM, holds near that until 9 AM, gradually recedes until noon and fluctuates between '0' and '.5' from noon until midnight.

A definite program for the cleaning of the walls and arches of the tunnels has not yet been determined. Thorough cleaning once a year and periodic brushing and flushing will probably suffice. Roadways are flushed daily and gutters are hand cleaned semi-weekly.

A count of traffic made on February 11, 1953, a Wednesday showed 8,668 vehicles eastbound and 8,760 westbound.

BUREAU OF STREET CLEANING
S.J. Sullivan, Superintendent

FUNCTIONS

Limited fund appropriations for labor and equipment has served unfortunately to reduce the effective aim of this Bureau to make the streets of San Francisco the cleanest in the State of California. This involves the cleaning of about 1600

Maintenance and Operation

curb miles of streets and 82 curb miles of center islands; the servicing of about 1600 street cans; removing weeds on streets and City-owned lots; removing garbage and trash dumped in lots, parks and on the streets; cleaning up after accidents; placing sand on oil spillages; maintaining planted areas in several center island streets; cleaning the tile in the Broadway Tunnel; and servicing 5 underpasses, 2 vehicular tunnels and 35 sets of public stairways.

ORGANIZATION AND ADMINISTRATION

On September 1, 1952 Mr. William T. Bonsor retired from his position as Superintendent of this Bureau after twenty-five years of meritorious service. From 1937 to 1950 he served as Supervisor and from 1950 to the date of his retirement as Superintendent of the Bureau.

There are four District Directors directly responsible to the Superintendent and each is accountable for the activities in his area of the City. Two of these Directors, Messrs. A.F. Schuler and T.F. Brown, were on sick leave for the entire year. Messrs. L.V. Easterday and P.A. Petersen, the other Directors, and A.P. Donohoe, as temporary Director, carried on the supervising work of the Bureau.

The remaining 329 employees were of the following classification:

1 Clerk Stenographer	265 Laborers
1 Gardener	12 Labor Sub-Foremen
1 Hired Truck & Driver	49 Chauffers

The business districts were serviced by 132 Blockmen and other sections of the City by gang sweeping and/or motor sweepers.

OPERATIONS

A new innovation of logging all complaints and requests for service was started in November, 1952. From that time to the end of the fiscal year 387 messages requiring some form of action, were recorded.

The 8 motor flushers washed down 69,197 curb miles of streets and the other Bureau trucks travelled 223,459 miles, hauling 116,330 cubic yards of debris to the 2 Bureau operated rubbish dumps.

There were 31,375 curb miles of pavement swept by the 10 motor sweepers as well as 82 curb miles of center islands.

A new dump was started at Jennings Street just north

Maintenance and Operation

of Arthur Street and a road was partly constructed in this area through use of over 7,000 cubic yards of material received from various track removal jobs. This fill and cover dump is on State of California tideland property and will eventually be made into valuable industrial property.

The regular cleaning of the ceramic tile in the new Broadway Tunnel is a new project started during the past year. It has been determined that a weekly washing of the lower reaches of tile is necessary so as to prevent costly hand work in the removal of the unsightly coat of dirt which accumulates. A continuing study is in progress of the proper use of detergents, the conversion of the available flushers and the possible need of a mechanical scrubber in order to do this work in the most economical manner.

The landscaped plots in Junipero Serra Boulevard from Ocean Avenue to 19th Avenue and in Sloat Boulevard from St. Francis Circle to the Great Highway are presently being maintained by this Bureau.

A Bureau Safety Committee was organized in a program to lessen the rates of lost time accidents occurring in our daily operations.

PREVENTIVE STREET CLEANING PROGRAM

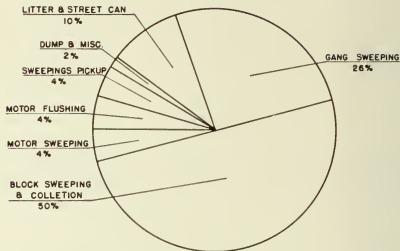
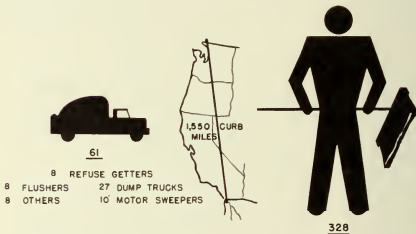
Determined attempts were made during the year to stop the 'Litterbugs' of the City from scattering papers and debris on our streets. The worst offenders are the two garbage collecting companies and the food stores. Improperly loaded garbage trucks and trash filled boxes in front of stores are mostly the source of wind swept papers being found throughout the City.

With the cooperation of the District Attorney, the Municipal Court and the Police Department, a drive was started in March of 1953 in an effort to eliminate the dumping of garbage in street cans, lots, parks, or on the streets. Several convicted violators were fined amounts ranging from \$10 to \$100 for each offense. The Bureau reported the names of 23 suspected violators to the District Attorney's office for his considered action.

Efforts failed in having a police officer regularly assigned to this Bureau to work with our personnel in an effort to stop these unsightly and unhealthy offenses. It has also been suggested that some of the City's auxiliary police be assigned to this work.

Suggestions have been made to the School Department that time be devoted to an educational campaign in the elementary and high school grades to stress good housekeeping in the streets as well as the home.

Maintenance and Operation

HOW DOLLAR IS SPENTBUREAU OF
STREET CLEANING

BUREAU OF STREET CLEANING

Maintenance and Operation

EQUIPMENT

Of the 61 pieces of Bureau equipment about 20 are about 13 years old and the cost of their maintenance has become uneconomical. Many of these are obsolete and parts must be obtained by cannibalizing one to keep the others running. In the coming year 3 motor sweepers and 3 dump trucks will be replaced.

Requests have been made for additional motor flushers and sweepers to inaugurate a program of fleet operation for efficient street cleaning.

BUREAU OF BUILDING REPAIR

Harry H. Hanssen, Superintendent

FUNCTIONS

The Bureau of Building Repair furnishes labor and materials for the maintenance and alterations of City-owned buildings that are under control of the Director of Public Works. Similar services are performed for the Board of Education and other municipal departments under a work order procedure.

Labor and material are furnished for traffic striping, marking of pedestrian lanes at street intersections and marking curbs for loading and parking zones, bus stops and safety zones.

In addition to maintenance and alteration work, this Bureau furnishes operating personnel for the City Hall, Hall of Justice, Health Center Buildings, Emergency Hospitals, Police Stations and Fire Houses, and is also responsible for the operation of the Civic Center Power House which furnishes heat to the Civic Auditorium, Public Library, Health Center Buildings and City Hall.

PERSONNEL

Personnel employments include one superintendent, one assistant superintendent, seven general foremen, ten foremen supervising 190 to 194 mechanics, supplemented by additional seasonal workers representing 13 building crafts, employed in repair and alterations, and 124 employed in operational work.

Repairs and Alterations

1 Superintendent	16 Cement Finishers and
1 Assistant Superintendent	Cement Helpers
7 General Foremen	24 Carpenters
11 Foremen	8 Locksmiths
25 Plumbers	5 Glaziers
12 Steamfitters	3 Plasterers
12 Sheet Metal Workers	1 Tile Setter
19 Electricians	2 Bricklayers
47 Painters	2 Hodcarriers
	2 Laborers

Additional Seasonal Workers as required

Maintenance and Operation

Operational

2 Chief Operating Engineers	3 Sub-foremen Janitors
9 Operating Engineers	72 Janitors
7 Junior Operating Engineers	2 Janitresses
16 Elevator Operators	7 Window Cleaners
1 Supervisor of Janitors	1 Sub-foreman Window Cleaner
3 Foremen Janitors	3 Watchmen

ORGANIZATION

PLUMBING DIVISION: 25 Men 1 General Foreman

There are from 8 to 10 men on regular assignments to the City Hall, San Francisco Hospital, Laguna Honda Home, Hall of Justice, County Jail No. 2, and the Fire and Police Departments. At times additional men are assigned to take care of emergency calls. Miscellaneous repairs to plumbing facilities in school buildings require from 6 to 8 men. Interdepartmental work orders for repairs and new installations of plumbing facilities require employment of from 6 to 8 men. The Recreation and Park Department keeps two men employed responding to emergency calls. Four panel-body service trucks are assigned for use by this division.

STEAM DIVISION: 12 Men 1 General Foreman

This division takes care of gas and fuel-fired steam boilers, steam lines, traps, radiators and vacuum equipment and all accessories connected with heating systems. It also supervises the bricking of boilers in the school department during the summer vacation period.

One man each is assigned to the City Hall, Hall of Justice, San Francisco Hospital, and Laguna Honda Home and additional men are assigned as necessary for emergency calls. Miscellaneous repairs in school buildings normally require the services of two men with extra assignments for emergency calls. Interdepartmental work orders issued by the Municipal Railway, Fire, Health, Public Welfare, Real Estate and School Departments, Sheriff and Director of Public Works keep 10 men employed. One panel-body service truck is assigned for use by this division.

SHEET METAL DIVISION: 12 Men 1 General Foreman

The work of this division includes the making of repairs to cornice work, ventilating systems, tile roofs, metal doors and the construction of guards for machinery in school buildings according to recommendations of the State of California Safety Division. The fabrication of street cans, buggy pans and scoops for the Bureau of Street Cleaning is also accomplished. The division has the use of one ½-ton service truck.

Maintenance and Operation

ELECTRICAL DIVISION: 19 Men 1 General Foreman 2 Foremen

The electric shop is equipped for and accomplishes the repair of electric master clocks, clocks, telephone equipment, electrical appliances of varied descriptions and the rewinding of motors.

Two men are on regular assignment to service certain public buildings: One is stationed at the City Hall serving the needs of the City Hall, Retirement Board Building, City Planning Commission Building, Women's Detention Ward and Central Power House and the other is located at the Hall of Justice serving the needs of that building, Coroner's Office, Central Police Station, City Prison and County Jails No. 1 and No. 3. Four men are on regular assignment to the school buildings to take care of emergency calls on telephone, intercommunicating systems, fire alarm, electric clock, sound and public address systems and general electric appliances. Eleven men are assigned to inter-departmental work orders making improvements and maintenance of electric facilities of all descriptions at Sewage Pumping Stations, Lift Bridges, Playgrounds and all Public Buildings requiring service. Five panel-body service trucks are assigned for use of this division.

PAINTING DIVISION: 47 Men 1 General Foreman 5 Foremen

Two men are on regular assignments for minor painting and touch up work: One at the City Hall and one at the San Francisco Hospital. Two foremen and 33 men are assigned to interdepartmental work orders on various painting jobs for the following activities: Board of Education; Police, Fire, Public Welfare, Health and Real Estate Departments; Superior and Municipal Courts; War Memorial; and the Department of Public Works (Budget items). Three foremen and 12 men are assigned to Street Traffic painting under orders from the Bureau of Engineering. They are required to work on Sundays and, during summer months, they are out at day-break to do striping in congested districts. The traffic painting personnel is divided into three crews each consisting of one foreman and four men. Their equipment includes two trucks with compressors, the striper buggy, which is shoved by one of the trucks, and one truck which carries paint, flags, stands, stencils and other necessary equipment. Two foremen and 10 men have three trucks with compressors and spray equipment for striping crosswalks. Four men have two trucks for painting curbs under orders from the Police Department.

CEMENT WORK DIVISION: 16 Men 1 General Foreman

This division takes care of requests from all other divisions in the Bureau for such work as opening up ground for broken water pipes or choked sewers; drilling for electric conduits; and replacing walks and yards which have been opened. Three plasterers and a tile setter are normally required to follow up on jobs of

Maintenance and Operation

other building crafts. Two men and one pickup truck are assigned for maintenance and repair of street signs. The equipment in use includes one 2-ton dump truck, one ¼-ton pickup truck, two ¾-ton pickup trucks, three 60 c.f.m. portable compressors and one 1-yard concrete mixer driven by gasoline motor.

CARPENTRY DIVISION: 24 Men 1 General Foreman 2 Foremen

There are from 5 to 6 men assigned to the Hall of Justice, City Hall, San Francisco Hospital and Fire Department for general repairs to these buildings. Six men are assigned to work on miscellaneous school requisitions taking care of various minor jobs of all descriptions. Eighteen men work on interdepartmental work orders received from City departments and commissions, making alterations and repairs. Three ¾-ton service trucks are assigned for use by this division.

LOCKSMITH DIVISION: 8 Men 1 Foreman

One man is assigned to the City Hall, Hall of Justice and the Fire and Police Departments and he is in charge of the Locksmith's Shop and men. One man is assigned to work on miscellaneous school requisitions. Five men are on interdepartmental work orders issued by all other departments and commissions. The locksmith's work consists of master-keying public buildings, making keys, opening locks, installing and repairing locks and panicbars. The Recreation and School Departments' lock problems are very serious, as master keys are often lost or stolen, and vandals are continually tampering with the locks. A service-equipped sedan and one ½-ton panel delivery truck are used by this division.

GLAZING DIVISION: 5 Men 1 Foreman

This division replaces glass in all public-owned buildings. Vandalism at the recreation centers and school buildings has been on the increase and at times the division has been unable to immediately cope with the replacing of all broken windows. Two service-equipped trucks are used by this division.

Maintenance and Operation

STATISTICAL DATA

Operations for the year entailed the following expenditures:

Superintendence and	
Building Operations	\$446,884.45
Yard and Shops	26,221.70
Carfare, towel service, etc.	6,781.97
Emergency Leaves	6,585.30
Vacations	8,982.45
Fuel Oil	32,759.92
Automotive Repair	4,999.77
Gasoline	3,570.30

\$ 536,785.86

Maintenance and repair of
General government buildings
performed with funds allotted to
the Bureau consisted of:

Public Buildings Improvements	\$ 96,342.17
Fire Stations	20,254.45
Police	3,877.51
County Jails	4,264.94
City Hall	55,489.38
Hall of Justice	24,418.12
S.F. Hospital and Laguna Honda Home	47,290.14
Miscellaneous structures	1,410.90
Equipment purchase	3,144.10

256,491.71

Work Order performance appeared in
three general divisions:

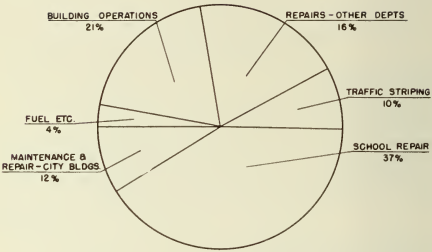
Schools	\$ 799,495.31
Traffic Striping, etc.	217,478.16
Various	340,073.63

1,357,047.10

TOTAL

\$ 2,150,324.67

Maintenance and Operation



HOW DOLLAR IS SPENT



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BUREAU OF
BUILDING REPAIR

BUREAU OF BUILDING REPAIR

FUNCTIONS

The Central Permit Bureau was established in 1932 pursuant to Ordinance 9132 New Series, Board of Supervisors, now incorporated in Chapter X, Article I, of the Public Works Code. This Bureau was organized principally for the reception and recordation of Applications and the processing of same in accordance with the above ordinance, and for the issuance of Permits predicated upon the above stated Applications; also the handling of all clerical work and details in connection with the above functions.

Statistics compiled by the senior clerk (acting as Statistician of the office) show that the activities of the Fiscal Year 1952-1953 remained practically stable with those of the previous year, 1951-1952.

Furthermore, the supervisory head of the Central Permit Bureau, in his capacity as Cashier of the Department of Public Works, handles all receipts of the Department and deposits same with the City and County Treasurer, in consonance with Section 82 of the Charter. An itemized detail of said receipts and deposits are summarized as an addenda in this report.

An additional function of the Supervisor of the Bureau is to handle all claims for damages to City property under the jurisdiction of this department, and to render bills for same and follow up collections therefor; also bill and collect all claims for excess costs incurred for the installation of side sewers, the physical work being performed by the Bureau of Sewer Repair.

The personnel of the Central Permit Bureau, as of June 30th, 1953, was as follows:

- 1 Supervisor
- 1 Cashier (Electrical Division)
- 2 Senior Clerks
- 1 General Clerk (position unfilled)
- 1 General Clerk-Stenographer
- 5 General Clerk-Typists

WORK PERFORMED

Enumerated below, are some of the major projects for which Building Permits were issued during the fiscal year being reported upon:

Alterations to Hospital (U. of C.)	\$ 664,793
Public School - Board of Education	405,000
Public School - Board of Education	782,000
5 Story Industrial Building	765,000
Office Building (State of California)	487,808
Public School - Board of Education	2,076,927

Central Permit Bureau

COMPARATIVE STATEMENT OF PERMITS ISSUED

	1952-53	1951-52	1950-51
Buildings	8,267	7,292	8,808
Billboards	227	196	130
Boiler Installations	202	169	182
Boiler Inspections	971	1,361	1,023
House Moving	69	126	91
Demolitions	85	125	153
Flue Registrations	34	36	45
Flue Permits - New Buildings	39	33	45
Flue Permits - Old Buildings	104	90	71
Flue Coupon Books - New Buildings	52	37	90
Flue Coupon Books - Old Buildings	25	27	11
Construct Sidewalks	16	18	16
Street Space	869	837	1,210
Excavations	809	678	1,095
Side Sewers	654	655	896
Excess Cost - Side Sewers	192	268	328
Sidewalk Flower Markets	44	41	44
Blasting	7	10	5
Advertising	25	23	23
House Number Certificates	878	793	1,397
Payments for Surveys	29	32	44
Payments for Engineering Inspection	65	64	81
Payments for Street Improvement Bonds	68	66	59
Public Utilities Street Openings	12,323	10,333	9,464
Posting Notices	737	674	1,159
TOTAL NUMBER OF PERMITS ISSUED	26,791	23,984	26,470

	1952-1953		1951-1952		1950-1951	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
Special Permit Fund	557	\$22,270.00	589	\$24,300.00	956	\$40,070.00
(St. Space & Sub-Sidewalks)						
House Moving Fund	-	-	2	200.00	2	200.00
Excavations	68	1,645.30	66	2,156.50	47	1,007.50
Side Sewers:						
Refunds to Depositors	561	29,984.62	711	28,799.07	891	36,325.77
Installation Costs						
credited to General Fund		99,275.38		118,040.93		132,879.23
Deposits on Plans	1,738	44,765.00	1,476	42,475.00	1,300	31,155.00
Street Improvement Bonds	-	-	-	-	-	4,483.35

REPORT OF HOUSE NUMBERING ACTIVITIES

	1952-1953	1951-1952	1950-1951
House Numbers Issued:			
Private Construction	1,550	1,390	3,170
Investigations made and			
Complaints Adjusted	1,200	1,100	1,300
Changes in House			
Numbering Ordered	123	140	165
Inquiries from Banks, Title Insurance			
Companies, General Public etc. answered	3,000	3,000	3,000

ADDITIONAL NON-REVENUE ACTIVITIES

Inquiries pertaining to Age and Class of Buildings, and other information requiring reference to old applications on file

12,500	10,000	9,500
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Plans brought from the basement for reference purposes and photostating

1,850	1,700	1,650
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Central Permit Bureau

CASHIER'S REPORT

Source of Receipt

Street Space Permit Deposits	\$	20,350.00
Sub-sidewalk Permit Deposits		-
House Moving Permit Deposits		-
Side Sewer Permit Deposits		138,745.00
Deposits on Plans		38,700.00

Excavation Permits

Special Deposits	\$	982.20	
Excavation (Special Deposits)		200.50	
(Public Utility Corporations)		17,901.75	
(Lowering Curbs, etc)		2,491.50	21,575.95
Building Permits	\$162,800.50		
Billboard Permits		563.00	
Demolition Permits		810.00	
Boiler Installations		1,109.00	
Boiler Inspections		4,678.00	
Use of Street Space		15,747.82	
House Number Certificates		3,238.00	
House Moving Permits		1,320.00	
Flue Registrations		680.00	
Flues - New Buildings		19.50	
" Old Buildings		208.00	
" New Buildings (Coupons)		650.00	
" Old Buildings (Coupons)		500.00	
Posting Notices		2,033.50	194,357.32
Fees - Sidewalk Flower Markets			1,404.00
Side Sewers - Excess Costs			5,702.63
Advertising Charges			2,505.14
Payments on Street Improvement Bonds			-
Payments on Street Improvement Bonds (Ord. of 1934)			9,727.78
Fees for Surveys			9,765.00
Fees for Inspections			17,480.00
Misc. (See Monthly Reports for itemized detail)			4,807,571.53
Total Receipts			\$5,267,884.35

Note: 16 Sidewalk Permits issued.

 No fees charged

Central Permit Bureau

DEPOSITS WITH CITY & COUNTY TREASURER
CLASSIFIED BY FUNDS

General Fund		
Street Space & Sub-Sidewalk	\$	20,350.00
House Moving		-
Side Sewer Deposits		138,745.00
Deposits on Plans		38,700.00
Surveys	\$	9,765.00
Inspections		17,480.00
		27,245.00
Excavations		
Deposits		982.20
Fees		20,593.75
		21,575.95
Advertising		2,505.14
Street Improvement Fund		-
Street Improvement Fund (Ord. of 1934)		9,727.78
Excess Costs - Side Sewers		5,702.63
Fees		
Building Permits		162,800.50
Billboards		563.00
Demolitions		810.00
Street Space		15,747.82
House Numbers		3,238.00
House Moving		1,320.00
Boiler Installations		1,109.00
Boiler Inspections		4,678.00
Flue Registrations		680.00
Flues - New Buildings		19.50
" Old Buildings		208.00
" New Buildings (Coupons)		650.00
" Old Buildings (Coupons)		500.00
Posting Notices		2,033.50
Sidewalk Flower Markets		1,404.00
		195,761.32
Miscellaneous Funds		
General Fund		45,777.43
Special Road Improvement Fund		2,477,216.27
State Highway Trust Fund		328,807.54
Special Gas Tax - Street Improvement Fund		1,337,447.26
1944 Sewer Bond Fund		605,877.04
1948 Sewage Treatment Fund		500.00
1944-1948 Juvenile Detention Home Fund		745.57
1948 School Bond Fund		11,200.42
		4,807,571.53
TOTAL DEPOSITS WITH CITY & COUNTY TREASURER		\$5,267,884.35

Central Permit Bureau

CLASSIFICATION OF BUILDING PERMITS ISSUED

Class or Type	No. of Permits	Estimated Cost	Fees
1-A	6	\$ 2,265,459	
1-B	10	7,865,778	
2	-	-	
3	41	2,480,650	
4	20	367,528	
5	1,177	19,572,839	
Alterations	7,013	13,337,231	
Totals	8,267	\$ 45,889,485	\$ 162,800.50
Billboards	227	30,620	563.00
Totals	8,494	\$ 45,920,105	\$ 163,363.50

(Total number of Building Applications received - 9,043)

FLUE REGISTRATIONS AND PERMITS

Flue Registrations	34	680.00
*Coupon Books - New Bldgs.	52	650.00
**Coupon Books - Old Bldgs.	25	500.00
Flue Permits - New Bldgs.	39	19.50
Flue Permits - Old Bldgs.	104	208.00
Totals	254	2,057.50

MISCELLANEOUS PERMITS

To raze Structures	85	810.00
To move Buildings	69	1,320.00
Boiler Installations	202	1,109.00
Boiler Inspections	971	4,678.00
Posting Notices	737	2,033.50
Totals	2,064	\$ 9,950.50
GRAND TOTALS	10,812	\$175,371.50

*New coupon books contain
25 Prepaid Coupons

**Old Coupon books contain
10 Prepaid Coupons

ELECTRICAL INSPECTION REVENUE

Central Permit Bureau

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Month	Electrical Inspection	Sign Inspection	Electrical Sales Permits	Contractors Registration	Plant Owners Registration	GRAND TOTAL
1952						
July	\$ 6,372.70	\$ 520.95	\$ 16,430.00	\$ 250.00		\$ 23,573.65
August	8,725.90	525.60	780.00	125.00		10,156.50
September	5,058.40	599.00	289.00			5,946.40
October	5,967.04	973.80	634.00	62.50	\$ 12.50	7,649.84
November	6,740.35	482.55	157.50	187.50		7,567.90
December	6,144.95	666.00	90.00	3,187.50	237.50	10,325.95
1953						
January	9,752.48	596.75	150.00	8,250.00	550.00	19,299.23
February	6,045.05	507.15	120.00	1,375.00	12.50	8,059.70
March	7,218.70	810.25	70.00			8,098.95
April	8,643.95	713.65	20.00		25.00	9,402.60
May	9,098.10	657.25				9,755.35
June	6,700.45	689.35	**11,040.00			18,429.80
TOTALS	\$*86,468.07	7,742.30	29,780.50	13,437.50	837.50	138,265.87

* \$100.10 Additional transferred to Electrical Inspection by S.J.V. from Dep't. of Public Works

** Allocated to fiscal year 1953-1954.

BUREAU OF ACCOUNTS
J.J. McCloskey, Chief Clerk

The Bureau of Accounts controls the budgetary and financial activities of the Department. It is the point of origin of documents dealing with the disbursement of funds and channels them through required procedures until final liquidation.

The Bureau has a central office at the City Hall and a division handling operating accounts at the Maintenance Yard, where the greater part of the staff is employed. The latter division is located at the new Maintenance Yard at Army and DeHaro Streets, where it is housed with the operating bureaus of the Department.

PERSONNEL

The permanent staff of 33 employees consists of:

- 1 - Chief Clerk in charge of the Bureau
- 2 - Head Clerks
- 5 - Bookkeepers
- 3 - Senior Clerks
- 13 - General Clerks
- 4 - General Clerk-Stenographers
- 3 - General Clerk-Typists
- 2 - Telephone Operators

In addition to the above employees, a Storekeeper is assigned by the Purchaser of Supplies to perform the duties in connection with the operation of the sub-storeroom and materials yard.

The permanent staff of the Bureau was increased during the year by the change of four employees from temporary to permanent status to meet increasing activities of the maintenance bureaus, the increased volume of interdepartmental work and procedures, and to relieve the Superintendent's force of the Bureau of Building Repair from clerical work so as to allow them time for supervising in the field.

FUNCTIONS AND ORGANIZATION

The operating functions of the Bureau embrace control of payroll procedure, personnel records and field-timekeeping; purchase order requisitions; sub-storeroom and inventories; automotive expenditures and gasoline and tire records; work order job costs and invoicing; side sewer job and refunds accounts; State gas tax subventions; the cash revolving fund for the Department; the stores revolving fund; budget preparation and control; operation of the Yard telephone exchange; and the supplying of clerical service to all of the operating bureaus.

Included in the general functions of the Bureau are three well defined sub-divisions; Payrolls and Personnel with 2 Senior Clerks and 5 assistants; Purchasing and Stores with a Senior Clerk and 2 assistants; Gas Tax sub-ventions and Bond Funds with a Head

Bureau of Accounts

Clerk and 3 assistants.

Three field timekeepers check outside operations for payroll verification and also act as paymasters on semi-monthly pay days, delivering pay warrants to employees on the job.

OPERATIONS

Reports to the Director on operations of the Building Repair, Sewer Repair, Street Repair and Street Cleaning Bureaus are prepared monthly by the Bureau of Accounts from the records maintained in the Bureau.

Job costs pertaining to damages to City property under the jurisdiction of the Department are compiled and forwarded to responsible parties for collection. These costs amounted to \$15,987.74 for the fiscal year and embraced 264 cases, covering damages to bridges, automotive equipment, street structures, traffic signals, street signs, traffic devices and prisoner damage to police stations. The Bureau handled the fiscal processing of contracts under bond issues for Street Improvements, Sewers, Sewage Treatment Plants, and Schools under programs which are expected to continue into subsequent years.

In the supplying of materials for the varied activities of the department, a sub-storeroom and a material yard are conducted, through which 14,474 transactions were handled involving the delivery of 44,766 items to jobs. Outside purchases from vendors brought about the issuance of 6636 requisitions and 5,867 delivery orders.

The Stores Revolving Fund under the control of the Bureau is designed to permit the purchase in advance of constantly used materials. Plumbing supplies, electrical items, paints, hardware, lumber, glass, tools, sewer pipe, brick, cement, castings and miscellaneous needs which can be foreseen, are carried in Stores and charged out to the various jobs as used. Controls have been established which facilitate monthly reimbursements for goods withdrawn, and Stores records are maintained on a perpetual inventory basis subject to annual physical check.

The Department Cash Revolving Fund of \$1,500 is used by the Bureau for payment of small bills and transportation charges, and enables workmen on field work to make cash purchases at neighborhood stores thus avoiding trips to downtown establishments. All transactions are conducted under controls set up by Ordinance.

Detailed records of all expenditures are maintained, particularly on jobs performed under work order procedure. In these, the Charter requires that all elements of indirect and supervisory costs be considered and made part of the final job cost. To accomplish this, indirect labor is pro-rated monthly on an exact percentage basis, as are overhead charges for accident

Bureau of Accounts

compensation, sick leave, vacation, retirement, equipment replacement and miscellaneous. These items of overhead are accumulated in reserves to meet the requirements designated. Charges for small tools and shop supplies used in work order operations are made against the miscellaneous reserve.

SUMMARY OF TRANSACTIONS

Budgeted Funds, Subject to control and appropriated to:	
Bureau of Accounts	\$ 63,822.00
Bureau of Architecture	48,785.00
Bureau of Building Inspection	309,590.00
Bureau of Building Repair	1,013,572.00
Central Permit Bureau	44,585.00
Bureau of Engineering	550,937.00
Sewage Disposal Plant	811,264.00
General Office	107,300.00
Bureau of Sewer Repair	812,482.00
Sewage Pumping Stations	67,174.00
Bureau of Street Repair	1,302,049.00
Bureau of Street Cleaning	1,516,022.00
Bridges - Tunnels	143,229.00
Gas Tax (Special Road Improvement)	529,505.00
Special Gas Tax-Street Improvement Fund	1,649,500.00
Gas Tax - Street Construction	1,932,277.00
Total Budgeted Funds	\$10,902,093.00

Interdepartmental service, under work order procedure for:	
Schools	\$ 1,677,128.31
Health	175,236.77
Recreation - Park	21,746.01
Library	30,781.49
Public Building Improvements	79,798.71
Gas Tax Accounts	2,275,306.55
Engineering	10,273.87
Sewage Plants	33,986.00
Public Utilities	370,513.34
General Office	134,125.05
Sewer Bonds	222,943.17
Street Bonds	976,505.53
Sewage Treatment Bonds	349,570.00
Public Welfare	6,757.80
Fire Department	41,489.30
Special Inspection	9,481.80
Juvenile Court Bonds	2,750.00
State Highway Cleaning	54,977.00
Miscellaneous	223,607.04
Paving Side Sewers	26,059.17
School Bonds	491,192.00

Total Interdepartmental Service \$ 7,214,228.91

Side Sewer Deposits, for installation and repair, covering 588 permit deposits for 673 house connections 128,735.00

GRAND TOTAL \$18,245,056.91

BUREAU OF ENGINEERING
CURRENT CONTRACT DATA SUMMARY
Showing all Contract Work Awarded or Under Way
July 1, 1952 to June 30, 1953

Table	Type of Construction	No.	Contracts Awarded Aggregate Value	Amount Expended Fiscal Year 1952-53
A	Major Thoroughfares	14	\$1,273,531.05	\$1,279,744.10
B-1	Streets - Private Contracts	26	365,445.00	348,072.00
B-2	Streets - Assessment Proceedings	15	139,996.67	155,419.09
B-3	Streets - Public Contract - City Pay	12	116,498.71	88,791.44
B-4	Street Car Track Removal	11	1,861,423.80	1,867,311.31
C	Traffic Signals and Channelization	9	579,950.99	293,185.00
D-1	Sewers - Pipe, Vitrified-Clay, and Concrete	7	440,509.69	298,709.68
D-2	Sewers - Concrete Monolithic	6	2,281,894.40	1,448,704.50
E-1	Miscellaneous	8	218,697.77	2,094,761.67
TOTALS		118	\$7,277,948.08	\$7,874,698.79

TABLES

On the following pages appear separate tables of current contracts for each of the types of Construction listed above. The source of the funds used to finance each project is indicated in the tables according to the following:

Designation	Abbreviation Legend Description of Fund
General	General Fund City and County
Spec. Rd.	Special Road Improvement Fund
Major Sts.	Special Gas Tax Improvement
State Hwy.	State Highway Fund
Assmt.	Assessed to property benefiting under the Street Improvement Ordinance of 1934
Pd. Prop. Owners	Costs borne by Property Owners under Private Contract
1944 Sewer Bonds	Bond Issue Voted by Citizens on Nov. 7, 1944 - \$12,000,000
1947 St. Imp. Bonds	Bond Issue Voted by Citizens on Nov. 4, 1947 - \$22,850,000
1948 Sewage Tr. Bonds	June 1, 1948 - \$15,000,000

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
A - MAJOR THOROUGHFARES					
Golden Gate Park Crossover - State Highway Route #56 (Widening and Reconstruction) Chas. L. Harney, Inc.	9-4-51	8-1-52	\$157,040.53	\$ 28,775.53	State Hwy.
Monterey Blvd. betw. Ridgewood Ave. and San Anselmo Ave. (Widening and Retaining Wall Reconstruction) Chas. L. Harney, Inc.	9-14-51	4-24-53	277,133.90	228,683.90	Major Sts. Spec. Rd.
Sloat Blvd. - Junipero Serra Blvd. to Great Highway (Reconstruction) Chas. L. Harney, Inc.	10-26-51	8-29-52	458,805.55	84,465.55	State Hwy. Major Sts.
Guerrero St. and San Jose Ave. betw. Army St. and Randall St. (Widening) Chas. L. Harney, Inc.	12-7-51	12-1-52	268,367.41	199,007.41	Major Sts. 1944 Sewer Bond
Phelan Ave. betw. Ocean Ave. and Judson Ave. (Widening) Eaton & Smith	4-25-52	12-30-52	80,168.30	74,088.30	Spec. Rd.
Winston Drive - Lake Merced Blvd. Easterly to Existing Pavement (Improvement) Chas. L. Harney, Inc.	5-23-52	3-20-53	31,948.46	31,948.46	Spec. Rd.
San Jose Ave. betw. Randall St. and Monterey Blvd. (Widening) Chas. L. Harney, Inc.	7-3-52	5-22-53	323,974.60	323,974.60	Major Sts. Spec. Rds.

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
A - MAJOR THOROUGHFARES (Cont'd)					
Divisadero St. betw. North Point and Marina Blvd.					
North Point St. betw. Scott and Baker Sts.					
Francisco St. betw. Scott and Divisadero Sts.	7-9-52	8-22-52 \$	7,721.47 \$	7,721.47	Spec. Rd.
(Resurfacing) Eaton & Smith					
Stanley Drive betw. Junipero Serra Blvd. and Alemany Blvd.	8-27-52	99.9%	184,105.50	152,575.00	Major Sts.
(Construction) Plombo Const. Co.					
Alhambra St. betw. Scott St. and Cervantes Blvd. and other streets in Marina District (Resurfacing)	10-22-52	2-20-53	24,159.06	24,159.06	Major Sts. Spec. Rd.
Lowrie Paving Co., Inc.					
Potrero Ave. betw. 16th and Army Sts. (Resurfacing) Assigned to Eaton & Smith	11-14-52	3-12-53	41,165.36	41,165.36	State Hwy.
The Fay Improvement Co.					
Twin Peaks Blvd. (First Contract) (Improvement) Chas.L.Harney, Inc.	11-19-52	5-1-53	30,314.46	30,314.46	Spec. Rd.
Alemany Blvd. betw. Mission and San Jose Ave. (Resurfacing)	2-27-53	53%	66,948.00	27,000.00	State Hwy.
Lowrie Paving Co., Inc.					
Clay St. betw. Scott St. and Arguello Blvd. (Reconstruction)	4-15-53	3%	142,113.50	3,145.00	Major Sts. Spec. Rd.
Lowrie Paving Co., Inc.					

CURRENT CONTRACT DATA 1952-1953

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APPENDIX I

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
A - MAJOR THOROUGHFARES (Cont'd)					
Richardson Ave. betw. Broderick and Lyon Sts. and Golden Gate Bridge Approach Ramps (Resurfacing) Lowrie Paving Co., Inc.	4-17-53	0%	\$ 18,714.50	0	State Hwy.
24th St. betw. So. Van Ness Ave. and Vermont St. (Reconstruction) U. Peira & Son	4-29-53	15%	96,205.00	11,900.00	Spec. Rd.
Arguello Blvd. betw. Washington and Fulton Sts. and other loca- tions (Resurfacing) Lowrie Paving Co., Inc.	4-29-53	12%	53,164.00	4,275.00	Spec. Rd.
Golden Gate Park Main Drive and Panhandle at Stanyan, Fell and Oak Sts. (Channelization) Eaton & Smith	5-1-53	8%	96,367.00	6,545.00	Spec. Rd.
Laguna Honda Blvd. from Clarendon Ave. to Dewey Blvd. (Widening) M & K Corp.	5-13-53	0%	183,663.60	0	Spec. Rd. Major Sts.
Broderick St. betw. Lombard and Beach Sts. (Resurfacing) Lowrie Paving Co., Inc.	6-5-53	0%	<u>4,915.00</u>	<u>0</u>	Spec. Rd.

Total Awarded and Expended During Fiscal Year . . . \$1,273,531.05 \$1,279,744.10

Total Available

CURRENT CONTRACT DATA 1952-1953

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts - Pd. Prop. Owners							
Winston Dr. 19th Ave($\frac{1}{2}$)	20th Ave.	Winston Dr.	C, P	Stonestown Corp.	6-22-49	3-17-52	\$ 20,000.00
Sherwood Forest Contract #1			S	Lang Const.Co.	7-7-50	9-3-52	8,200.00
*Harkness Ave.	Rutland St.	Sparta St.	C,P	Bernal Const. Co.	8-3-50	6-11-52	7,300.00
Stonestown Subdivision	-	-	S	Stonestown Corp.	3-2-51	3-17-53	25,000.00
Ordway St.	Brussels St.	Goettingen St.	S,C,P	Fay Impr.Co.	3-30-51	8-5-52	6,300.00
Army St. Marin St. Michigan St.	Michigan St. Illinois St. Army St.	Louisiana St. Michigan St. Marin St.	P,S,C	Eaton & Smith	7-13-51	4-28-52	69,760.00
*Dartmouth St.	Olmstead St.	Mansell St.	S,P,C	Fay Impr. Co.	7-13-51	8-20-52	9,600.00
*Dartmouth St.	Dwight St.	Woolsey St.	S,C,P	Fay Impr. Co.	8-8-51	9-25-52	8,500.00
*Goettingen St.	Mansell St.	310' S.	S,C,P	Fay Impr. Co.	8-15-51	8-6-52	7,900.00
*Dartmouth St.	Dwight St.	Olmstead St.	S,C,P	Fay Impr. Co.	8-15-51	9-19-52	8,200.00
Molimo Drive	Dorcas Way	Teresita Blvd.	S	Fay Impr. Co.	8-17-51	9-25-52	46,800.00
Sloat Blvd.	Everglade Drive	Clearfield Drive	C,P	Chas. L. Harney, Inc.	8-17-51	9-12-51	8,000.00

CURRENT CONTRACT DATA 1952-1953

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts- Pd. Prop. Owners (Cont'd)							
Buckingham Way	Winston Dr.	20th Ave.	C, P	Stoneson Development Corp.	9-7-51	3-17-52	\$ 50,000.00
*Los Palmos Dr.	Foerster St.	Teresita Blvd.	S, C, P	Pay Impr. Co.	10-3-51	60%	19,500.00
Waterloo St.	Bayshore Blvd.	Loomis St.	C, P	Pay Impr. Co.	10-17-51	8-13-52	7,050.00
Parnassus Ave.	-	Univ. of California	S	E. J. Treacy	10-17-51	8-18-52	4,000.00
Midtown Terrace #2	Streets Within	-	S, C, P	Chas. L. Harney, Inc.	11-16-51	4-22-53	30,000.00
19th Ave.	So. Rossmore Drive	-	S	M. J. Lynch	12-21-51	1-30-52	5,000.00
*Campbell Ave.	Elliot St.	Delta St.	C, P	Bernal Constr. Co.	1-23-52	10-2-52	10,200.00
Hollister Ave.	E. of Hawes	-	S, C, P	Pay Impr. Co.	3-21-52	2-3-53	7,200.00
Peralta Ave.	Mayflower St.	Powhattan Ave.	S, C, P	Pay Impr. Co.	3-26-52	4-16-53	5,300.00
Warren and Locksley Sts.	Lawton Heights	-	G	Eaton & Smith	4-4-52	40%	8,500.00
*Burnham St.	24th St.	25th St.	S, C, P	Pay Impr. Co.	4-11-52	4-21-53	10,100.00
*Mangels Ave.	Detroit St.	Congo St.	C, P	Pay Impr. Co.	4-25-52	4-17-53	12,400.00

10-11-52 11-10-52 4-30-52 4-30-52 4-30-52 4-30-52 4-30-52 4-30-52

CURRENT CONTRACT DATA 1952-1953

APPENDIX I

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts - Pd. Prop. Owners (Cont'd)							
19th Ave.	So. Rossmoor Drive	-	S	Greiman Plumb. Co.	6-20-52	7-10-52	\$ 1,000.00
Hunters Pt. District	-	-	S	Geo. N. Weinholz	6-27-52	80%	2,000.00
Warren Dr.	Locksley Ave.	S'y Termination	S,C,P	Eaton & Smith	7-18-52	40%	28,000.00
Lakeshore Country Club Acres #1	-	-	S,C,P	Lowrie Pav.Co.	7-23-52	2-25-53	100,200.00
Lakeshore Park Subdivision #4 } Gellert Dr. and } Intersection }	Clearfield Drive	Middlefield Drive	S,C,P	Lowrie Pav.Co.	8-20-52	1-30-53	22,500.00
De Haro St.	15th St.	Intersection	C.B., C,W,P	Pacific Pavements Co., Ltd.	9-12-52	1-9-53	1,900.00
Islands Creek Channel	Industrial St.	115' So. Boutwell St.	S	Lowrie Pav.Co.	10-24-52	2-6-53	3,525.00
Chicago Way Extension	E'y Term.	100' E'y	C,P	Eaton & Smith	11-12-52	4-24-53	6,560.00
Shafter Ave.	Hawes St.	Griffith St.	G	Clementina Co.	11-12-52	3-30-53	1,200.00
Paradissus Ave.	-	Univ. of California	S	E.J.Treacy	11-21-52	11-25-52	500.00

CURRENT CONTRACT DATA 1952-1953

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts - Pd. Prop. Owners (Cont'd)							
*Moreland St. Moreland St.	Diamond St. Adeline St.	Farnum St. -	C, P	Fay Impr. Co.	11-26-52	40%	\$ 6,900.00
*Cambridge St. Felton St.	Silliman St. Oxford St.	Felton St. Cambridge St.	S, C, P	Fay Impr. Co.	11-26-52	40%	13,100.00
*Corwin St. Corwin St.	Douglass St. Acme Alley	W'yly Term. -	S, C, P	Fay Impr. Co.	12-12-52	30%	19,000.00
*Locksley Ave. E ₂	Lawton St.	S'yly Term.	S, C, P	Eaton & Smith	12-17-52	40%	16,200.00
Converse St.	Bryant St.	200' N.	S, C, B.	Lowrie Pav. Co.	1-21-53	1-26-53	600.00
Charter Oak Ave.	Industrial St.	75' N'yly Helena St.	S, C, P	Fay Imp. Co.	1-30-53	40%	27,000.00
De Haro St.	15th St.	-	P, C, B., S, C, W	Pacific Pave- ments Co., Ltd.	2-11-53	3-18-53	2,300.00
Junipero Serra Blvd.	Felix Ave. (Former)	-	Sty	Eaton & Smith	2-18-53	2-27-53	2,000.00
Erie St.	Mission St.	E'yly Term.	P	Eaton & Smith	3-13-53	4-6-53	500.00
Grant Ave.	So. Francisco St.	-	Ret. Wall	R. S. Silverberg	3-13-53	3-27-53	650.00
Lakeshore Country Club Acres #2	-	-	S	Fay Imp. Co.	3-18-53	4-29-53	30,000.00
Lenox Way	90' N. Ulloa St.	-	S	Bernal Const. Co.	3-20-53	5-18-53	250.00

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-1 STREETS - Private Contracts - Pd. Prop. Owners (Cont'd)							
Juniper St.	Harrison St.	Bryant St.					
Juniper St.	-	Bryant St.	Track W.	Eaton & Smith	4-1-53	80%	\$ 2,500.00
Grand View Ter.	-	-	S	Pay Imp.Co.	5-13-53	0%	6,560.00
Mercury	67' S. Thornton Ave.	185' So.	P	Pay Imp.Co.	5-20-53	0%	1,000.00
Townsend St.	Sixth St.	-	Track W.	Pacific Pavements Co., Ltd.	5-27-53	6-17-53	5,000.00
*Shafter Ave.	Hawes St.	Griffith St.	C,P	Chas. L. Harney, Inc.	5-29-53	0%	15,500.00
Lakeshore Country Club Acres #3	-	-	C,P	Standard Bldg. Co.	6-5-53	40%	52,000.00
Total Awarded During Fiscal Year							\$365,445.00
Total Value of Work done During Fiscal Year							\$348,072.00

*Remaining Portion Improved under Public-City Pay Contract

S = Sewers G = Grading P = Paving C = Curbs W = Sidewalk C.B. = Catchbasin

Sty = Stairway

CURRENT CONTRACT DATA 1952-1953

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings							
Harkness Ave.	Rutland St.	Sparta St.	C,P	Bernal Const. Co.	8-23-50	6-11-52	\$ 3,118.55 (1,396.38)-
Harkness Ave.	Adler St.	Rutland St.	S,C,P	Bernal Const. Co.	8-23-50	6-11-52	5,979.65 (2,252.08)-
Dartmouth St.	Olmstead St.	Mansell St.	C,P	Pay Impr.Co.	7-6-51	8-20-52	4,546.00 (1,922.15)-
Dartmouth St.	Woolesey St.	Dwight St.	C,P	Pay Impr.Co.	8-8-51	9-25-51	5,060.57 (1,646.33)-
Dwight St.	Dartmouth St.	Crossing	S,C,P	Pay Impr.Co.	8-15-51	9-29-52	4,563.72 (2,538.72)-
Goettingen St.	Mansell St.	310' S.	C,P	Pay Impr.Co.	8-15-51	8-6-52	1,618.71 (843.71)-
Goettingen St.	Mansell St.	Crossing	S,C,P	Pay Impr.Co.	8-15-51	9-30-52	5,293.69 (2,593.69)-
Dartmouth St.	Dwight St.	Olmstead St.	C,P	Pay Impr.Co.	8-15-51	9-19-52	5,487.44 (4,512.44)-
Ordway St.	San Bruno Ave.	Girard St.	S,C,P	E.J.Treacy	9-7-51	7-1-52	6,167.52 (2,346.80)-
Campbell Ave.	Delta,Ervin and Alberta	Intersections	S,C,P	Bernal Const. Co.	9-12-51	8-21-52	6,684.94 (1,165.73)-
Los Palmos Dr.	Poerster, Verna Sts.	Intersections	S,C,M,P	Pay Impr.Co.	9-19-51	40%	4,557.50 (600.00)-

CURRENT CONTRACT DATA 1952-1953

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Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings (Cont'd)							
Los Palmos Dr.	Foerster St.	Teresita Blvd.	C, S, P	Fay Impr. Co.	10-3-51	60%	\$ 11,318.50 (6,880.50)-
Sargent St.	Bright St.	Vernon St.	S, C, P	Eaton & Smith	12-12-51	9-26-52	35,907.73 (7,733.24)-
Campbell Ave.	Elliot St.	Delta St.	C, P	Bernal Const. Co.	1-23-52	10-2-52	6,151.34 (3,051.66)-
Peralta Ave.	Mayflower St.	Powhattan Ave.	C, P	Fay Impr. Co.	3-26-52	4-16-53	3,409.14 (800.00)-
Florentine Ave.	Brunswick St.	N'y Exist. Pavement	S, C, P	Eaton & Smith	4-9-52	8-28-52	5,208.16 (1,480.86)-
*Burnham St.	24th St.	25th St.	S, C, P	Fay Impr. Co.	4-11-52	4-21-53	5,551.87 (2,908.73)-
*Mangels Ave.	Detroit St.	Congo St.	C, P	Fay Impr. Co.	4-25-52	4-17-53	6,998.50 (4,300.00)-
24th St.	Burnham St.	Fountain St.	C, P	Fay Impr. Co.	4-30-52	11-19-52	1,954.80 (836.26)-
Ralston St.	Randolph St.	Worcester St.	S, C, P	Fay Impr. Co.	5-28-52	3-24-53	12,722.80 (9,500.00)-
Worcester St.	Ralston St.	Vernon St.					
Esmeralda Ave.	Bernal Heights Blvd.	Peralta Ave.	C, P	Bernal Const. Co.	6-18-52	4-24-53	5,767.10 (2,600.00)-
Phelps St.	Galvez Ave.	Jerrold Ave.	S, C, P	Chas. L. Harney, Inc.	7-25-52	2-25-53	27,064.96 (15,003.67)-

CURRENT CONTRACT DATA 1952-1953

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings (Cont'd)							
Wilde Ave.	Ervine St.	Delta St.	S,C,P	Chas. L. Harney, Inc.	8-6-52	2-23-53	\$ 4,658.44 (1,502.21)-
Felton St.	Gambier St.	Harvard St.					
Felton St.	Harvard St.	Crossing	S,C,P	Eaton & Smith	10-15-52	2-27-53	9,233.94 (1,410.94)-
Cambridge St.	Felton St.	Crossing	C,P	Pay Impr.Co.	11-5-52	40%	2,759.40 (500.00)-
*Cambridge St. Felton St.	Silliman St. Oxford	Felton St. Cambridge St.	C,P	Pay Impr.Co.	11-26-52	40%	7,422.60 (3,400.00)-
*Moreland St.	Diamond St.	Parnum St.	C,P	Pay Impr.Co.	11-26-52	40%	4,906.60 (2,200.00)-
(Crescent Ave. (Nevada St.	Prentiss St. Crescent Ave.	42.6' E. Nevada St. N'ly Exist. Pavement		Chas. L. Harney, Inc.	11-26-52	5-11-53	7,675.30 (3,900.00)-
*Corwin St.	Acme Alley	W'ly Term.	C,P	Pay Impr.Co.	12-12-52	30%	7,686.20 (4,600.00)-
Vernon St.	Shields St.	Sargent St.	S,C,P	Pay Impr.Co.	12-17-52	7%	18,637.86 (10,000.00)-
*Lawton St. Locksley Ave.	7th Ave. Lawton St.	Locksley Ave. S'ly Term.	S,C,P	Eaton & Smith	12-17-52	40%	11,151.80 (No City Aid)
Duncan St.	Noe St.	Newburg St.	S,C,P	Eaton & Smith	12-17-52	60%	27,347.50 (20,500.00)-

Dunbar St. Noe St. Newburg St. S.C.F. EATON & EATON (20,500.00)

CURRENT CONTRACT DATA 1952-1953

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - Assessment Proceedings (Cont'd)							
Kirkham St.	4th Ave.	5th Ave.	G,C S,W	E.J.Treacy	1-14-53	95%	8,598.60 (3,600.00)-
Hopkins Ave.	Burnett Ave.	Corbett Ave.	C,P	Eaton & Smith	2-20-53	5-7-53	2,853.47 (474.07)-
Total Awarded During Fiscal Year							\$139,996.67
Total Value of Work Done During Fiscal Year							\$155,419.09

* = Remaining Portions of Street Under Private Contract

() - Estimated Amount of City Obligation. Balance Through Assessment of Property Benefited.
City Funds from Special Road Improvement Fund.

S = Sewers C = Curbs P = Paving W = Sidewalks

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
B-3 STREETS - Public Contract City Pay					
Eucalyptus Drive betw. 19th & 20th Aves. (widening) The Fay Improvement Co.	5-14-52	7-25-52	\$ 4,174.48	\$ 3,079.48	Spec. Rd. Impr.
Sanchez St. betw. 18th and 19th Sts. (Reconstruction) Chas. L. Harney, Inc.	6-4-52	8-29-52	13,747.76	13,747.76	Spec. Rd. Impr.
Jerrold Ave. betw. Quint St. and Phelps St. (Curbs and Pavement) The Lowrie Paving Co., Inc.	6-4-52	8-11-52	11,725.39	11,725.39	Spec. Rd. Impr.
Junipero Serra Blvd. (West Side) betw. Sloat Blvd. and Stratford Drive (Construction of Sidewalk) Balliet Bros. Construction Co.	7-30-52	9-16-52	4,468.82	4,468.82	Spec. Rd. Impr.
35th Ave. betw. Pacheco and Quintara Sts. (Sewers - Curbs - Paving) The Lowrie Paving Co., Inc.	8-15-52	3-27-53	16,198.83	16,198.83	SP Unified School District
Innes Ave. (Portions) betw. Mendell and Lane Sts. (Curbs - Paving) Eaton & Smith	8-22-52	11-20-52	1,519.50	1,519.50	Spec. Rd. Impr.
Middlefield Drive (E'ly $\frac{1}{2}$) from Lake Merced Blvd. to 50 ft. N'ly to Existing Pavement The Lowrie Paving Co., Inc.	9-5-52	3-25-53	1,200.00	1,200.00	SP Unified School District
Sunnydale Ave. from Sunnydale Housing Project (W'ly Line) to 500' westerly (Improvement of) Eaton & Smith	9-12-52	4-23-53	14,222.10	14,222.10	SP Unified School Dist. Spec. Rd. Impr.
Castro St. betw. Alvarado & 24th Sts. (Reconstruction) M. J. Lynch	12-3-52	3-30-53	16,023.43	16,023.43	Spec. Rd. Impr.

Project (Improvement of) Eaton & Smith Streets 9-12-52 4-23-53 14,252.10
 Castro St. betw. Alvarado & 16th Sts. 10-3-52 3-30-53 16,023.43
 Spec. Rd. Impr.

APPENDIX I

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
B-3 STREETS - Public Contract City Pay (Cont'd)					
37th Ave. betw. Ortega and Quintara Sts. (Curbs - Paving)					SF Unifried School District Spec.Rd.
Quintara St. betw. 37th and 38th Aves. (Sewer) Chas. L. Harney, Inc.	1-16-53	0%	\$49,573.00	0	
Ocean Ave. betw. Lakeshore Drive and Sunset Blvd. (Sewer-Paving-Curbs) Chas. L. Harney, Inc.	3-27-53	6-2-53	4,916.13	4,916.13	Spec.Rd. Impr.
Graystone Terrace (N'ly side) betw. Copper and Iron Alleys (Construction of Concrete Sidewalk) Love & Haun	5-22-53	0%	685.85	0	SF Unifried School District
Morrell Place to Hyde St. (Construction of an Access Road) M. J. Lynch	5-27-53	6-10-53	1,690.00	1,690.00	Spec.Rd. Impr.
*Shafter Ave. (Portions) betw. Hawez and Griffith Sts. (Curbs, Paving) Chas. L. Harney, Inc.	5-29-53	0%	2,505.00	0	Spec.Rd. Impr.
Santiago St. (N.½) betw. 22nd Ave. and 350 ft. West					
22nd Ave. (W.½) betw. Rivera St. (N/L) and Santiago St. (Sidewalks and Incidental Work) Pay Improvement Co.	6-12-53	0%	3,496.05	0	SF Unifried School District
Total Awarded and Expended During Fiscal Year			\$116,498.71	\$88,791.44	

*Remaining Portions Improved under Private Contract.

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
B-4 STREETS - Car Track Removal					
22nd St. betw. Mission and Chattanooga 24th St. betw. Dolores and Hoffman Ave. Chattanooga St. betw. 22nd and 24th Sts. Dolores St. betw. 22nd and 24th Sts. (Removal of Tracks and Reconstruction of Pavement) Chas. L. Harney, Inc.	11-30-51	8-14-52	\$283,522.98	\$61,502.98	Spec. Rd. Impr. 1947 St. Impr. Bond
Turk St. - Market to Divisadero Eddy St. - Market to Divisadero Mason St. - Turk to Eddy (Removal of Tracks and Reconstruction of Pavement) Piombo Construction Co.	6-25-52	97%	458,428.90	364,565.00	Major St. 1947 St. Impr. Bd. - Spec. Rd.
Broadway betw. Powell and Davis Sts. (Removal of tracks and Reconstruction of Pavement) Eaton & Smith Valencia St. betw. McCoppin and Mission Sts. 14th St. betw. Mission and Valencia Sts. (Removal of Tracks and Reconstruction of Pavement) The Fay Improvement Co.	7-9-52	11-5-52	86,171.95	86,171.95	1947 St. Imp. Bd. 1944 Sewer Bd. Spec. Rd. Impr.
29th St. betw. Mission and Noe Sts. Virginia Ave. betw. Mission and Coleridge Sts. Coleridge St. betw. Virginia and Esmeralda Aves. Cortland Ave. betw. Mission and Folsom Sts. (Removal of Tracks and Reconstruction of Pavement) Eaton & Smith	7-11-52	2-13-53	212,331.12	212,331.12	Major Sts. 1947 St. Impr. Bond
	7-18-52	11-10-52	156,062.51	156,062.51	1947 St. Imp. Bd. Spec. Rd. Impr.

CURRENT CONTRACT DATA 1952-1953

APPENDIX I

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
B-4 STREETS - Car Track Removal (Cont'd)					
Third St. betw. Market and Channel Sts. (Removal of Tracks and Reconstruc- tion of Pavement) Eaton & Smith	7-23-52	1-23-53	\$107,819.36	\$107,819.36	Major Sts. 1947 St. Imp.Bds.
Van Ness Ave. betw. North Point and Market Sts. (Removal of Tracks and Reconstruction of Pavement) Market St. betw. 11th St. and So. Van Ness Ave. (Track Work) Chas. L. Harney, Inc.	8-6-52	2-21-53	405,444.46	405,444.46	State Highway 1947 St. Imp.Bds. Muni. RRwy.
Clement St. betw. Arguello Blvd. and 8th Ave. 8th Ave. betw. Clement and Fulton Sts. (Removal of Tracks and Reconstruc- tion of Pavement) Lowrie Paving Co.	2-11-53	6-10-53	139,728.58	139,728.58	Spec. Rd. Impr. 1947 St. Imp.Bds.
Folsom St. betw. 3rd St. and Precita Ave. Precita Ave. betw. Folsom and Army Sts. Army St. betw. Bryant and Potrero Ave. 26th St. betw. Mission and Bryant Sts. (Removal of Tracks and Reconstruc- tion of Pavement) Chas. L. Harney, Inc.	2-20-53	60%	477,201.97	242,080.00	Major Sts. Spec. Rd. Impr. 1947 St. Imp.Bds.
Clement St. betw. 8th Ave. and Park-Presidio Blvd. (Removal of Tracks & Reconstruction of Pavement) The Lowrie Paving Co.	3-4-53	5-29-53	46,725.35	46,725.35	1947 St. Imp.Bds.
Army St. betw. 3rd and Kansas Sts. (Removal of Tracks and Reconstruction of Pavement) The Lowrie Paving Co.	4-3-53	49%	58,762.50	24,565.00	Spec. Rd. Impr. 1947 St. Imp.Bds.

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
B-4 STREETS - Car Track Removal (Cont'd)					
Powell St. betw. Broadway and The Embarcadero					
Vallejo St. betw. Van Ness Ave. and Larkin St.					
Union St. betwn. Larkin St. and Columbus Ave.					
Larkin St. betw. Vallejo St. & Union St. (Removal of Tracks and Reconstruction of Pavement)	5-13-53	15%	\$ 165,311.00	\$ 20,315.00	1947 St. Imp. Bds.
Bryant St. at intersections of 9th and 10th Sts. (Removal of Tracks and Reconstruction of Pavement)					
Chas. L. Harney, Inc.	5-20-53	78%	5,865.00	0	1947 St. Imp. Bds.
Total Awarded and Expended During Fiscal Year			\$1,861,423.80	\$1,867,311.31	

CURRENT CONTRACT DATA 1952-1953

APPENDIX I

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Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
C - TRAFFIC SIGNALS AND CHANNELIZATION					
Traffic Signals at Isolated Crossings (9th Contract) (Installation) Ets-Hokin & Galvin	4-18-52	2-6-53	\$ 86,440.76	\$ 82,200.76	Major Sts. Spec.Rd.Impr.
Bayshore Blvd.betw.Augusta St. & Third St. (Traffic Signals and Channelization) R. Flatland	5-9-52	8-7-52	22,979.15	22,979.15	Major Sts.
3rd St. at Berry and Channel (Modi- fication of Traffic Signal System) H. S. Tittle Co.	5-21-52	7-9-52	1,712.00	1,712.00	Spec.Rd.Impr.
Portola Drive at Woodside Ave.(Relo- cation of Intersection Controller) R. Flatland	6-18-52	7-21-52	1,680.00	1,680.00	Spec.Rd.Impr.
Alemanly Blvd. betw. San Jose Ave.and Junipero Serra Blvd.(Channelization) Pacific Pavements Co., Ltd.	11-12-52	3-3-53	38,787.89	38,787.89	Major Sts.
Pressure Vehicle Detectors at Various Intersections (Resetting) R. Flatland	11-12-52	1-15-53	2,250.00	2,250.00	Spec.Rd.Impr.
Mission District (Installation of Traffic Signal System) R.Flatland	1-2-53	34%	267,662.00	76,925.00	Spec.Rd.Impr. Major Sts.
Market St. betw. The Embarcadero and 10th St. - First Contract (Traffic Signals and Channelization) Ets-Hokin & Galvin	2-25-53	71%	66,346.15	37,440.00	Major Sts.

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
C - TRAFFIC SIGNALS AND CHANNELIZATION (Cont'd)					
Kezar Drive at Main Drive Connection and at South Drive (Channelization) U. Peira & Son	2-27-53	5-27-53	\$ 9,185.20	\$ 9,185.20	Major Sts. Spec.Rd.Impr.
Franklin St. betw. Grove St. and Chestnut St.					
Gough St. betw. Grove St. and Chestnut St. (Traffic Signal System) Fred Johnson Electric Co.	4-1-53	23%	54,474.00	9,225.00	Major Sts.
Broadway betw. Polk St. and Columbus Ave. (Traffic Signals) Abbett Electric Corp.	4-8-53	80%	13,965.00	0	Spec.Rd.Impr.
Traffic Signals at Isolated Crossings (11th Contract) (Installation) R. Flatland	4-24-53	13%	107,490.00	10,800.00	Spec.Rd.Impr.
Market St. betw. The Embarcadero and 10th St. (2nd Contract) (Traffic Signals and Channelization) Abbett Electric Corp.	5-20-53	0%	19,790.75	0	Spec.Rd.Impr.
Total Awarded and Expended during Fiscal Year			\$579,950.99	\$293,185.00	

CURRENT CONTRACT DATA 1952-1953

APPENDIX I

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Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
D-1 SEWERS - PIPE - Vitrified and Concrete					
36th Ave. and Sunset Blvd. - Sloat Blvd. to Vicente St. (Construction of Sewer) M. J. Lynch	10-24-51	9-19-52	\$114,908.29	\$ 54,908.29	1944 Sewer Bd.
Lake St. Sewer System Section "C" (Contract 3) (Construction and Track Removal) McGuire & Hester	12-28-51	7-23-52	182,018.20	32,928.20	1944 Sewer Bd.
Castenada Ave. to Laguna Honda Blvd. at Clarendon Ave. (Sewer Replace- ment and Slope Reconstruction) Arthur Wallgren	8-6-52	4-13-53	59,950.00	59,950.00	Spec. Rd. Impr. 1944 Sewer Bd.
Southeast Collecting Sewers - Sec. C-1 3rd St. Diversion Structure (North of Islais Creek and Connecting Sewers) (Construction) M & K Corp.	9-24-52	4-17-53	105,181.84	105,181.84	1948 Sew. Tr. Bond
Skyline-Sunset Outlet Sewer at Intersections Sloat-Skyline Connection and Lake Merced Blvd. (Construction of Sewer) Lowrie Paving Co., Inc.	10-17-52	11-26-52	4,162.50	4,162.50	1944 Sewer Bd.
Jackson St. betw. Mason and Powell Sts. (Sewers) The Pay Improvement Co.	12-17-52	4-29-53	28,828.85	28,828.85	1944 Sewer Bd.
Mendell St. Sewer Outlet and Sanitary Sewers - Fairfax Ave. to Davidson Ave. (Mendell St. Sewer - First Contract) Chas. L. Harney, Inc.	2-6-53	8%	51,192.50	3,150.00	1944 Sewer Bd.

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
D-1 SEWERS - PIPE - Vitrified and Concrete (Cont'd)					
Southeast Collecting Sewers - Sec. C-2 Islais Creek North Shore Sanitary Sewer (Construction) M. J. Lynch	3-4-53	0%	\$127,744.00	0	1948 Sew. Tr. Bond
Parnassus Ave. betw. Arguello Blvd. and Stanyan St. (Sewer Replacement) The Pay Improvement Co.	4-10-53	19%	63,450.00	\$ 9,600.00	1944 Sewer Bd.
Total Awarded and Expended During Fiscal Year			\$440,509.69	\$298,709.68	

CURRENT CONTRACT DATA 1952-1953

APPENDIX I

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Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
D-2 SEWERS - CONCRETE (Monolithic)					
Southeast Collecting Sewers - Sec. A-2 (Effluent Intercepting, Miscellaneous Sewers) M & K Corp.	6-20-51	12-24-52	\$485,966.20	\$280,691.20	1948 Sewage Tr. Bond
Southeast Collecting Sewers - Sec. E-1 (Construction East Influent Intercepting Sewer) Duncanson-Harrelson	9-21-51	4-23-53	186,821.00	155,626.00	1948 Sewage Tr. Bond
Southeast Collecting Sewers - Secs. B-1, B-2, B-3 (Construction Diversion Structure and Intercepting Sewer) Healy Tibbitts Construction Co.	11-21-51	12-24-52	261,262.30	233,212.30	1948 Sewage Tr. Bond
Southeast Collecting Sewers - Secs. E-2, F-1, F-2, and F-3, Hunters Point Sewer Tunnel and Adjacent Sewers (Construction) Joint { M & K Corp. Venture { Fredrickson & Watson Co. { Piombo Const. Co.	8-20-52	63%	1,275,000.00	678,640.00	1948 Sewage Tr. Bond
Southeast Collecting Sewers - Sec. J Diversion Structure in Cayuga Ave. at Milton St. (Cayuga - Alemany Diversion) M. J. Lynch	9-5-52	12-18-52	25,450.00	25,450.00	1948 Sewage Tr. Bond
Southeast Collecting Sewers - Secs. D-1, D-2, and D-3 Mariposa Diversion Structure, Sewage Pumping Station, Force Main and Connecting Sewers (Construction) Chas. L. Harney, Inc.	9-12-52	36%	197,646.00	59,245.00	1948 Sewage Tr. Bond

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
D-2 SEWERS - CONCRETE (Monolithic) (Cont'd)					
14th St., Folsom - Harrison Sts. (Sewer Replacement) Chas. L. Harney, Inc.	10-22-52	16%	\$ 133,719.40	\$ 15,840.00	1944 Sewer Bd.
18th St. Sewer - Section "A" Shotwell St. to Church St. 18th St. - Harrison St. to Guerrero St. (Widening and Repaving) M & K Corp.	4-29-53	0%	641,679.00	0	1944 Sewer Bd. Spec. Rd.
20th Ave. and Lincoln Way (Reconstruction of sewer transition structure) M. J. Lynch	6-3-53	0%	<u>8,400.00</u>	<u>0</u>	1948 Sewage Tr. Bond
Total Awarded and Expended During Fiscal Year			\$2,281,894.40	\$1448,704.50	

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
E-1 MISCELLANEOUS					
Broadway Tunnel and Approaches betw. Polk and Powell Sts. (Construction of Tunnel) Morrison-Knudsen Co. Inc.	2-8-50	1-7-53	\$6,138,553.62	\$1,639,333.62	1947 St. Impr. Bd.
Stanley Drive Underpass including Channelization of Junipero Serra Blvd. (Construction) M & K Corp. Eaton & Smith	11-3-50	8-1-52	447,227.83	79,857.83	State Hwy. Major Sts. 1927 Blvd. Bd.
Bryant St. Viaduct betw. 2nd St. and Beale St. (Construction of Viaduct) Chas. L. Harney, Inc.	9-21-51	99%	274,596.00	208,930.00	Major Sts. Spec. Rd.
Farmers Market (2nd Contract) Admin- istration Bldg. (Construction) Hart & Hynding, Inc.	11-16-51	7-9-52	24,129.15	6,429.15	General
Log Cabin Ranch in San Mateo County (Resurfacing Access Road) L. C. Smith Co.	12-26-51	7-15-52	8,282.00	1,312.00	General
Log Cabin Ranch (Construction of Swim- ming Pool) Paddock Engineering Co.	3-21-52	6-30-52	12,800.00	12,800.00	Donation
El Camino Del Mar and 36th Ave. (In- stallation of Electric Air Raid Siren) Ets-Hokin & Galvin	4-30-52	7-28-52	652.22	652.22	General
South Sunset Playground (Construc- tion of Sidewalks) Cecotti & Son	5-16-52	7-15-52	2,424.75	2,424.75	Spec. Rd. Impr.
Islais Creek Bridge (Repairs West Girder North Leaf) Judson Pacific Murphy Corp.	5-21-52	8-1-52	960.00	960.00	Spec. Rd. Impr.

CURRENT CONTRACT DATA 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
E-1 MISCELLANEOUS (Cont'd)					
Log Cabin Ranch (Widening Portion Road) Bernal Construction Co.	5-21-52	7-16-52	\$ 1,735.00	\$ 1,735.00	General
Southeast Sewage Treatment Plant (Construction of Bumping Posts for Spur Track) M. J. Lynch	6-25-52	8-27-52	2,028.00	2,028.00	1948 Sewage Tr. Bonds
Farmers Market - 5th Contract (Construction of Parking Area Pavement, etc.) Lowrie Paving Co., Inc.	6-27-52	10-31-52	13,911.83	13,911.83	General
Lombard St. at No. 1725 (Razing Building) Cleveland Wrecking Co.	7-25-52	12-17-52	300.00	300.00	State Hwy
Ingerson Ave. west of Griffith St. (Furnish and Operate Drilling Equipment) J. N. Pitcher Co.	10-10-52	10-29-52	112.00	112.00	Spec. Rd. Impr.
Ingerson Ave. west of Griffith St. (Slide) (Construct a Shaft and Tunnel Subsurface Drainage System) Casey & Case Foundation Co.	10-15-52	12-8-52	15,211.60	15,211.60	School Bond
Naglee Ave., Alemany Blvd., Cayuga Ave. (Construction of Sewer and Stairway) Chas. L. Harney, Inc.	10-17-52	99%	6,490.00	5,015.00	Spec. Rd. General
Farmers Market (6th Contract) (Timber Baffles) Berquist Construction Co.	11-12-52	1-23-53	2,360.00	2,360.00	General
Youth Guidance Center near Portola Drive & Woodside Ave. (Reconstruction of misc. existing slopes & drain-					

Parilla, Esquerra Center near Portola
Youth Guidance Center near Portola
Drive & Woodside Ave. (Reconstruc-
tion of mine, existing slopes Adrain-

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
E-1 MISCELLANEOUS (Cont'd)					
George Washington High School Yard Area (Intercepting Drainage System) M. J. Lynch	11-14-52	2-11-53	12,559.17	12,559.17	1948 School Bond
Richmond-Sunset Sewage Treatment Plant (Construction of a Sluice Gate in the Influent Channel) Healy-Tibbitts Construction Co.	11-19-52	3-11-53	890.00	890.00	1948 Sewage Tr. Bond
Millie Rock Sewer (Removal of a Bar Rack) M. J. Lynch	12-24-52	2-26-53	875.00	875.00	1944 Sewer Bond
Phelan Beach Recreation Area (Second Contract) Improvement of) Hart & Hynding	1-2-53	88%	54,906.50	40,275.00	1947 Rec. Bond
18th St. betw. Shotwell and Church Sts. (Test Borings for Sewer) Raymond Concrete Pile Co.	2-6-53	3-13-53	1,165.00	1,165.00	1944 Sewer Bond
Alpha St. - Tioga Ave. Connection (Construction of Stairways and additional Improvements) Lowrie Paving Co., Inc.	2-11-53	99%	3,806.00	0	Spec. Rd. Impr.
University and Woolsey Sts., Vicinity of (Drainage Facilities) Coast Pipeline	2-11-53	4-22-53	1,967.00	1,967.00	Spec. Rd. Impr.
Mission-Bartlett Parking Plaza betw. 21st and 22nd Sts. (Construction) Lowrie Paving Co., Inc.	4-1-53	69%	41,354.50	21,525.00	1947 Off-street Parking Bd.

CURRENT CONTRACT DATE 1952-1953

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1952-1953	Fund
E-1 MISCELLANEOUS (Cont'd)					
Southeast Sewage Treatment Plant (Alterations to Existing Piping in Digester Control Building No. 1 and in Filtration Building) Hastorf-Nettles, Inc.	4-1-53	5-10-53	\$ 1,590.00	\$ 1,590.00	1948 Sewage Tr. Bond
Sloat Blvd. betw. Junipero Serra Blvd. and Great Highway (Planting) Bernard Gayman	4-3-53	40%	10,328.00	3,075.00	Spec. Rd. State Hwy.
Maintenance Yard at 2323 Army St. (2nd Contract) (Miscellaneous Improvements) Adam Arras & Son	6-3-53	0%	35,031.00	0	General
Broadway Tunnel (Construction of Parti- tion Walls) Berquist Construction Co.	6-12-53	0%	3,114.00	0	Spec. Rd. Impr.
Total Awarded and Expended During Fiscal Year			\$218,697.77	\$2,094,761.67	

BUREAU OF ARCHITECTURE

REPORT OF ACTIVITIES

Showing all work completed, contracts under construction
and work in progress, and work under preparation
July 1, 1952 to June 30, 1953

WORK COMPLETED

Board of Education

New School Building Construction	
George Washington High School	\$ 217,033.00
Miraloma Elementary School	989,342.00
Abraham Lincoln High School	3,649,412.00
Sunset "A" Elementary School	1,282,891.00
Ocean View Heights Home School Unit	358,063.00
Delta & Wilde Home School Unit	299,800.00
Silver Avenue Elementary Grading	36,750.00
Sunset Community Center Grading	149,755.00
Test Borings & Soil Analyses	
Sunset Community Center Site	1,900.00
Sunnydale Elementary School Site	1,800.00
Bret Harte Elementary School Site	291.50
Silver Avenue Elementary School Site	618.50
Silver Avenue Elementary School Site	270.00
City College Cafeteria Site	610.00
Miscellaneous Alterations	
Pacific Heights, Galileo, Jackson (Cast stone and window work)	31,365.00
Francisco Junior High School (Alter Girls Shower)	11,989.00
Jefferson Elementary School (Acoustical work)	34,687.00
Jefferson Elementary School (Electricial work)	14,425.00
Bayview Elementary School (Minor alterations)	3,678.00
Marshall Elementary School (Exterior eaves)	31,777.00
Madison Elementary School (Roofing and windows)	27,912.00
Frank McCoppin Elementary School (Roofing and windows)	26,978.00
Sutro Elementary School (Windows)	24,531.00
Sheridan Elementary School (Roofing)	13,331.00
Lowell High School (Girls Gym acoustical work)	3,120.00

Miscellaneous Alterations (Continued)

Ulloa Elementary School (Della Robbia Panels)	\$ 985.00
Sheridan Elementary School (Fire Escape)	7,332.00
City College of San Francisco (Paint Technology Laboratory)	5,450.00
George Washington High School (Roofing)	20,622.00
John Swett School (Remodeling)	184,500.00
San Miguel Elementary School (Moving Prefab Classrooms)	20,618.00
Emerson Elementary School (Remodeling)	20,222.00
Lincoln Elementary School (Remodeling)	26,823.00
Ridgepoint No. 1 and No. 2, Guadalupe, and Doublerock Elementary Schools (Moving Prefab Classrooms)	25,885.00
Mission High School (Boys Gymnasium Roof)	73,762.00
Miraloma Elementary School (Moving Prefabricated Classrooms)	30,978.00

Resilient Flooring

Fairmount and Commodore Sloat Elementary Schools	23,802.00
Sheridan Elementary School	9,213.00
Junipero Serra Elementary School, Part I & II Gough, Cabrillo, and Andrew Jackson Elementary Schools	19,809.00
Guadalupe & Bayview Elementary Schools	19,390.00
Portola Junior High and E. R. Taylor Elementary School	20,197.00
Jefferson Elementary School	12,903.00
Pacific Heights Elementary School	11,532.00
Yerba Buena Elementary School	12,473.00
Francisco Junior High School	8,852.00
Emerson Elementary School	11,474.00
Monroe Elementary School	9,257.00
Paul Revere Elementary School	12,733.00
Farragut Elementary School	4,473.00
Lowell High School	9,967.00
Sutro & Peabody Elementary Schools	19,599.00
Wm. McKinley Elementary School	16,440.00
	11,922.00

Yard Repaving

Marina Junior High School	50,079.99
Junipero Serra Elementary School	4,405.00
Commodore Sloat Elementary School	20,586.00
Longfellow Elementary School	10,974.00

Yard Repaving (Continued)

George Washington High School	\$ 35,300.08
Guadalupe Elementary School	12,114.00
Mission High School	16,277.00
Washington Irving Elementary School	10,840.00
Grattan Elementary School	4,385.00
Jackson Elementary School	8,893.00
Roosevelt Junior High School	3,950.00
Presidio Junior High School	22,519.00
Yerba Buena Elementary School	8,830.00
Francis Scott Key Annex	5,749.00

Interior Painting

Balboa High School	37,200.00
Columbus Elementary School	10,813.00
Grattan Elementary School	12,627.00
Sunnyside Elementary School	6,488.00
Spring Valley Elementary School	11,987.00
Presidio Junior High School	26,259.00
Lowell High School	36,860.00
Horace Mann Junior High School	21,123.00
Candlestick Cove Elementary School	4,774.00
Lincoln High School	6,800.00

Total Board of Education Work Completed \$8,253,375.07

Department of Public Health

San Francisco Hospital

Maternity Fifth Floor Alterations	\$ 15,169.00
Pharmacy & Laundry Elevator Alterations	1,350.00
T. B. Wing Isolation Building	
Replace elevator equipment	30,099.60
Service Bldg. New 620 H. P. Boiler	61,000.00
Fire Escapes	8,349.00
Surgical Floor Sealing	170.00
Alter Head Porter's Office	3,100.00
Elevator Alterations	1,350.00

Laguna Honda Home

Coffee & Tea Urn Area Remodeling	7,137.00
Alterations to Building "C"	3,489.00
Remodel Dishwashing Area	8,886.00
Paint Auditorium	3,897.00

Total Public Health Work Completed \$ 143,996.60

Museums

M. H. deYoung Memorial Museum	
Spanish Room Ceiling	\$ 1,190.00
New Skylights and roof repairs	3,311.00
Remodel Gallery and Installation of	
Antique Rooms	51,445.17
Oakes Panel	5,720.00
Oakes Flooring	4,738.00

Legion of Honor	
Repair Cast Cement	4,594.00

Total Museum Work Completed	\$ 70,998.17
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Fire Department

Alterations	
Engine No. 32 Repairs	\$ 15,424.00
Total Fire Department Work Completed	\$ 15,424.00

Civic Center

Civic Center - Survey	\$ 10,000.00
City Hall	
Treasurer's Office Fluorescent Lighting	3,095.14
Civic Auditorium	
Interior Painting Corridors and Stairs	7,627.56
Terrazzo Floors	1,231.00
Marquee Deck Painting	1,200.00
Interior Painting	18,051.00
Library Annex 45 Hyde Street	
Reroofing	2,400.00
Total Civic Center Work Completed	\$ 43,604.70

Miscellaneous

Steinhart Aquarium	
Rewiring	\$ 6,789.00
Youth Guidance Center	
Alter Rain Leaders	300.00
Central Shop No. 1	
Roofing	2,637.00
Otis Street Traffic Courts	
Alter Third Floor	5,301.00

Hassler Health Farm		
Paint Employee Dormitory	\$	7,979.00
Paint Male Dormitory		1,800.00
Central Heating Plant		
Repair Smokestack		2,894.00
Total Miscellaneous Work Completed	\$	27,700.00
TOTAL ALL WORK COMPLETED		\$8,555,098.54

CONTRACTS UNDER CONSTRUCTION

Board of Education

Percent
Completed

New School Building Construction		
Patrick Henry Elementary School	\$	728,154.00
Bret Harte Elementary School		1,223,359.00
Sunnydale Elementary School		1,170,276.00
Twin Peaks Elementary School		439,444.00
Lakeside Elementary School		784,118.00
Douglas Elementary School		486,121.00
Girls High School Addition		782,434.00
City College Classroom Building		2,326,800.00
Burnett Elementary School		602,825.00
Sunset Junior High School		2,851,615.00
San Miguel Elementary School		737,000.00
Mark Twain Elementary School		711,089.00
Test Borings & Soil Analyses		
Diamond Heights Junior High School Site		1,980.00
Miscellaneous Alterations		
City College of S. F.		
(Air Conditioning & Refrigeration Lab)		63,000.00
Samuel Gompers Trade School		
(Part I Conversion)		126,600.00
George Washington High School		
(Windows)		24,200.00
Commerce Building		
(Conversion)		79,493.00
Various Schools		
(Alter Heating Plants)		141,000.00
Grant Elementary School		
(Remodeling)		36,962.00
Parkside Elementary School		
(Remodeling)		53,035.00

Percent
Completed

Miscellaneous Alterations (Continued)

Bryant Elementary School		
(Remodeling)	\$ 39,334.00	20
Kate Kennedy Elementary School		
(Remodeling)	37,698.00	12
Samuel Gompers		
(Part II Conversion)	44,642.00	25
Lincoln Elementary School		
(Moving Frame Classrooms)	27,864.00	75
Wm. McKinley Elementary School		
(Remodeling)	34,592.00	10
Parkside Elementary School		
(Moving Prefab Classrooms)	11,882.00	20
Lincoln High School		
(Elevator)	20,743.00	2
Lafayette Elementary School		
(Roofing)	5,811.00	0
Noriega-Lawton Elementary Schools		
(Moving Prefab Classrooms)	24,589.00	0
Polytechnic High School		
(Remodel Principal's Office)	8,814.00	0
Polytechnic High School		
(New Home Economic Room)	21,793.00	0
J. A. O'Connell		
(Dust Collector System)	26,486.00	0
J. A. O'Connell		
(Radio Studios & Partitions)	27,849.00	0
Resilient Flooring		
Commodore Stockton Elementary School	11,111.00	18
Candlestick Cove Elementary School	1,581.00	0
Hunters Point No. 1 and Ridgepoint		
No. 1 & 2 Elementary Schools	2,483.00	50
I. M. Scott Elementary School	1,533.00	80
Horace Mann & James Lick		
Elementary Schools	15,884.00	15
S. F. Continuation	6,758.00	0
Yard Repaving		
Pacific Heights Elementary School	10,668.00	20
Jean Parker Elementary School	9,183.00	10
Sherman Elementary School	21,891.00	10
LeConte Elementary School	17,435.00	2
Edison Elementary School	19,435.00	7
Marshall Elementary School	7,985.00	0
Columbus Elementary School	11,805.00	20
Geary Elementary School	23,800.00	0
S. F. Continuation	15,690.00	0
Raphael Weill Elementary School	15,717.00	0
Sarah Cooper Elementary School	13,944.00	0

Percent
Completed

Yard Repaving (Continued)

Candlestick Cove Elementary School	\$ 3,729.00	10
Dudley Stone Elementary	23,835.00	0
Cabrillo Elementary School	27,750.00	0
Lawton Elementary School	26,742.00	0

Interior Painting

Roosevelt Junior High School	16,090.00	30
Portola Junior High School	19,821.00	15
Lafayette Elementary School	1,549.00	20
Jefferson Elementary School	14,433.00	20
Edison Elementary School	16,741.00	35
Candlestick Cove Elementary School	4,878.00	0
Ulloa Elementary School	4,750.00	0
Lake Merced Elementary School	5,877.00	60
Francisco Junior High School	17,471.00	40
Ridgepoint No. 1 Elementary School	3,377.00	70
Ridgepoint No. 2 Elementary School	3,380.00	80

Total Amount of Contracts Under

Construction for Board of Education \$14,098,928.00

Department of Public Health

San Francisco Hospital		
Surgical Suite Part II	\$ 98,945.00	0
Roof Repairs of Wards	10,160.00	0

Laguna Honda Home		
Alter Cadaver Boxes	5,511.00	5

Total Amount of Contracts Under

Construction for Public Health \$ 114,616.00

Fire Department

Alterations

Central Fire Alarm Station		
(Exterior Repairs)	\$ 4,438.00	95
Central Fire Alarm Station		
(Interior Repairs)	6,411.00	0
Engine No. 43 Repairs	3,008.00	0
Engine No. 42 Repairs	4,886.00	0

APPENDIX II

II-

Percent
Complete

New Construction			
Park Merced Fire House	\$	194,711.00	97
19th & Folsom Sts. Fire House		521,448.00	0

Total Fire Department Work Under Construction	\$	734,902.00	
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Civic Center

City Hall			
Acoustical ceiling in Treasurer's Office	\$	2,710.00	0
Paint Interior Stairways		4,240.00	0

Total Civic Center Work Under Construction	\$	6,950.00	
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Miscellaneous

Steinhart Aquarium			
Temporary Shoring	\$	9,415.00	0
Steinhart Aquarium			
Paint Swamp Room & Foyer		1,845.00	50
Potrero Branch Library			
Alterations		1,947.00	0

Total Miscellaneous Work Under Construction	\$	13,207.00	
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TOTAL ALL WORK UNDER CONSTRUCTION	\$14,968,603.00	
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WORK UNDER PREPARATION

Board of Education

New School Buildings

Plans & Specifications Completed		
Silver Avenue Elementary School (W. D. Peugh)	\$	846,000.
Commodore Stockton Elementary School (Angus McSweeney)		675,000.

New School Buildings (Continued)

Working Drawing Stage

Ridgepoint No. 3 Elementary School (Kent & Hass)	\$ 1,000,000.00
Funston & Santiago Junior High School (Ernest J. Kump)	3,008,600.00
Lake Merced Elementary School (John L. Reid)	1,041,900.00
Starr King Elementary School (Blanchard & Maher)	700,000.00
City College Cafeteria (Milton T. Pflueger)	495,000.00

Preliminary Drawing Stage

Luther Burbank Junior High School (Gardner A. Dailey)	2,900,000.00
Columbia Park Elementary School (Ernest J. Kump)	300,000.00
Ridgepoint No. 2 Elementary School (John Gloe)	858,000.00

Miscellaneous Alterations

Commerce Building (Penthouse Roofing)	2,395.00
Polytechnic High School (Remodeling)	37,000.00
Alta Vista Elementary School (Window Reconstruction)	40,000.00
Yerba Buena Elementary School (Cornice & Roofing)	5,000.00
S. F. Continuation (Cornice & Roof)	30,000.00
Mission, Balboa, & Portola (Cafeterias)	65,000.00
Polytechnic High School (Conversion of Forge area into two ceramic classrooms)	60,000.00
Sunshine School (Elevator)	35,000.00
Alamo Elementary School (Painting)	16,000.00
Golden Gate Elementary School (Flooring)	9,000.00
Sarah Cooper Elementary School (Flooring)	9,000.00
Polytechnic High School (Flooring)	20,000.00
Franklin Elementary School (Flooring)	3,000.00
San Miguel Elementary School (Flooring)	9,000.00
Parkside Elementary School (Paving)	26,000.00

Miscellaneous Alterations (Continued)

I. M. Scott Elementary School (Paving)	\$ 9,000.00
Bryant Elementary School (Paving)	10,000.00
Visitacion Valley Elementary School (Paving)	15,000.00
Alamo Elementary School (Roof & exterior wall repairs)	9,000.00
Edison Elementary School (Replace roof gutters & leader pipes)	2,000.00
Fairmount Elementary School (Reroofing of Buildings)	5,000.00

Total Amount of Work Under Preparation for the Board of Education	\$12,270,895.00
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Department of Public Health

New Construction	
Sunset Community Health Center	\$ 84,000.00
San Francisco Hospital	
Replace plumbing lines	35,000.00
Exterior Painting	25,000.00
New Boiler Room doors	1,500.00
New electric elevator	39,800.00
Physiotherapy Department remodeling	15,000.00
New fire escapes	9,500.00
Isolation Nurses Home repairs	2,000.00
Laguna Honda Home	
Kitchen Alterations	108,350.00
Bakery Alterations	25,000.00
New Plumbing in Ward "A"	141,000.00
New 750 H. P. Boiler	198,000.00
Survey for Additions & Alterations to all Buildings	2,000.00

Total Amount of Work Under Preparation for Department of Public Health	\$ 686,150.00
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Fire Department

New Construction	
16th & Vermont Streets Fire House	\$ 160,000.00
Various New Fire Houses under Bond Issue	2,000,000.00

Alterations

Various Alterations under Bond Issue	\$ 350,000.00
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Total Amount of Work Under Preparation for Fire Department	\$ 2,510,000.00
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Public Library

New Construction

Marina Branch Library	\$ 150,000.00
North Beach Branch Library	140,000.00

Alterations

Main Library Second Floor (New Flooring)	6,500.00
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Total Amount of Work Under Preparation for Public Library	\$ 296,500.00
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Civic Center

Civic Auditorium

New Draperies	\$ 7,000.00
Modernize Toilets	8,000.00
Asphalt tile in Basement	1,500.00

City Hall

Waterproof Interior Skylights	4,000.00
Rehang ceiling fixtures in the Supervisors' Chambers	3,500.00
Soundproofing of Superior Courts	5,000.00

Total Amount of Work Under Preparation for Civic Center	\$ 29,000.00
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Miscellaneous

Steinhart Aquarium

(Preparation of a Survey)	\$ 16,000.00
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Hassler Health Farm

(Investigation of roof and ceiling repairs of Ward Buildings)	300.00
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Registrar of Voters Machine Warehouse	400,000.00
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Log Cabin Ranch Hog Pens	2,000.00
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Public Welfare Department (Alterations to 150 Otis Street)	\$ 40,000.00
Police Department Pistol Range	1,390.00
Department of Electricity (Studies for New Maintenance Plant)	3,000.00
Total Amount of Work Under Preparation for Miscellaneous Departments	\$ 462,690.00
 TOTAL AMOUNT OF ALL WORK UNDER PREPARATION	 \$16,255,235.00
 GRAND TOTAL OF ALL WORK COMPLETED, UNDER CONSTRUCTION, AND UNDER PREPARATION	 \$39,778,936.47

11-12
00.00
90.00
00.00
90.00
35.00
36.47

III-1

APPENDIX III

SEWAGE PUMPING STATION DATA

	Commercial St.	Fitzgerald Ave.	Fulton St.	Hyde St.
Drainage Area, Acres	92.5	30	82	14
Average Lift, Feet	20	48	56	29
Light & Auxiliary Power	6%	Negl.	40%	25%
% of Total KWH				
Max. Pumping per day	184%			
% of Yearly Average				
KWH per Million Foot	7.6	8.7	9.1	5.4
Gallons Pumped (A)	41%	36%	35%	58.3%
Pumping Efficiency (3.15/A)				

	Commercial St.	Fitzgerald Ave.	Fulton St.	Hyde St.
	Million Gallons Pumped	Million Gallons Pumped	Million Gallons Pumped	Million Gallons Pumped
	Power K W H	Power K W H	Power K W H	Power K W H
July 1952	26.136	1.451	3.114	2.718
August	24.468	1.389	3.727	2.785
September	26.232	1.509	3.691	2.464
October	27.156	1.470	4.342	3.537
November	25.800	1.704	3.894	2.800
December	33.264	0.664	3.401	3.595
January 1953	28.872	0.953	3.240	3.794
February	22.608	1.842	3.898	2.155
March	24.456	1.210	5.386	1.384
April	24.648	0.884	4.169	1.526
May	24.444	1.650	7.579	1.754
June	24.984	1.690	5.090	1.849
Total	313.068	16.288	48.217	29.332
		6,480	24,680	4,598

SEWAGE PUMPING STATION DATA

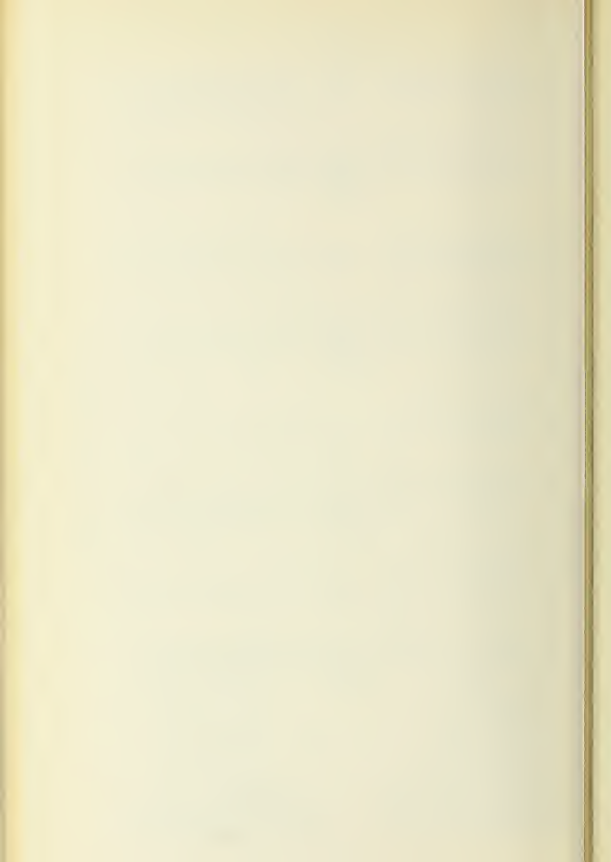
	Lake Shore			La Place Canyon			Marina			Park Merced		
	Million Gallons Pumped	Power K W H		Million Gallons Pumped	Power K W H		Million Gallons Pumped	Power K W H		Million Gallons Pumped	Power K W H	
Drainage Area, Acres												
Average Lift, Feet												
Light and Auxiliary Power												
% of Total KWH												
Max. Pumping Per Day												
% of Yearly Average												
KWH Per Million Foot												
Gallons Pumped (A)												
Pumping Efficiency (3.15/A)												
	Lake Shore			La Place Canyon			Marina			Park Merced		
	Million Gallons Pumped	Power K W H		Million Gallons Pumped	Power K W H		Million Gallons Pumped	Power K W H		Million Gallons Pumped	Power K W H	
July 1952	4.064	2,560		0.466	194		175.563	33,120		11.562	10,080	
August	5.213	3,200		0.415	176		179.000	32,160		11.354	11,520	
September	5.882	3,040		0.497	209		180.712	34,080		11.113	8,000	
October	5.954	3,200		0.443	188		187.763	35,040		11.851	10,560	
November	6.683	4,000		0.458	196		192.962	36,480		12.883	11,520	
December	7.135	3,360		0.933	405		234.863	45,600		10.260	10,720	
January 1953	3.830	2,730		0.553	276		235.125	45,600		12.332	12,320	
February	5.407	2,560		0.912	364		186.562	34,560		10.855	10,880	
March	5.550	3,360		0.436	192		208.225	39,360		13.143	12,160	
April	5.818	3,680		0.864	317		194.175	36,000		11.911	11,200	
May	6.736	4,000		0.704	285		188.363	34,080		12.774	11,040	
June	5.769	4,000		0.553	210		193.512	35,040		12.710	10,880	
Total	68.040	39,680		7.234	3,012		2,356.825	441,120		142.698	130,880	

III-3

APPENDIX III

	Pine Lake	Sea Cliff #1	Sea Cliff #2	Vicente
Drainage Area, Acres	3	4	83.4	51.4
Average Lift, Feet	56	49	94	56
Light and Auxiliary Power				
% of Total KWH	Negl.	Negl.	10%	Negl.
Max. Pumping per Day			171%	
% of Yearly Average				
KWH per Million Foot	8.3	9.6	9.0	11.2
Gallons Pumped (A)	38%	33%	35%	30%
Pumping Efficiency (3.15/A)				

	Pine Lake	Sea Cliff #1	Sea Cliff #2	Vicente
	Million Gallons Pumped	Million Gallons Pumped	Million Gallons Pumped	Million Gallons Pumped
	Power K W H	Power K W H	Power K W H	Power K W H
July 1952	0.157	0.054	4.366	4.201
August	0.162	0.053	4.361	4.223
September	0.183	0.085	4.892	4.277
October	0.176	0.084	4.856	3.721
November	0.219	0.064	4.793	3.823
December	0.218	0.092	6.420	5.351
January 1953	0.478	0.054	6.702	4.385
February	0.149	0.062	4.715	3.764
March	0.301	0.083	6.319	4.531
April	0.101	0.054	5.415	5.330
May	0.320	0.087	5.193	4.120
June	0.231	0.050	6.018	5.221
Total	2.695	0.875	64.050	52.947
	1,396	469	54,160	33,140





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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF
SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1954

PROPERTY
OF THE
DEPARTMENT OF CITY PLANNING
CITY AND COUNTY OF SAN FRANCISCO

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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30 1954

ELMER E. ROBINSON

THOMAS A. BROOKS

SHERMAN P. DUCKEL

MAYOR

CHIEF ADMINISTRATIVE OFFICER

DIRECTOR OF PUBLIC WORKS



RICHMOND SUNSET SEWAGE TREATMENT PLANT

APRIL 1988

COURTESY R. T. COFFMAN

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MAYOR
ELMER E. ROBINSON

**CHIEF
ADMINISTRATIVE
OFFICER**
THOS. A. BROOKS

ORGANIZATION CHART

DEPARTMENT OF PUBLIC WORKS

JUNE 30, 1954

CITY AND COUNTY OF SAN FRANCISCO

DIRECTOR
SHERMAN P. DUCKEL

**ASST. DIRECTOR
ADMINISTRATIVE**
F.W. MCKENZIE

**ASST. DIRECTOR
MAINT. & OPERATION**
L.J. ARCHER

BUREAU OF ENGINEERING
CITY ENGINEER RALPH G. WADSWORTH

BUREAU OF BUILDING INSPECTION
SUPERINTENDENT LESTER C BUSH

BUREAU OF ARCHITECTURE
CITY ARCHITECT CHAS. W. GRIFFITH

GENERAL OFFICE

BUREAU OF STREET REPAIR
SUPERINTENDENT F.D. BROWN

BUREAU OF ACCOUNTS
SUPERVISOR J J M'CLOSKEY

BUREAU OF SEWER REPAIR
SUPERINTENDENT E.F. MUHEIM

CENTRAL PERMIT BUREAU
SUPERVISOR S J ROSENBLUM

BUREAU OF BUILDING REPAIR
SUPERINTENDENT H H HANSSEN

BUREAU OF STREET CLEANING
SUPERINTENDENT S.J. SULLIVAN

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

OFFICE OF THE
DIRECTOR OF PUBLIC WORKS

July 1, 1954

260 CITY HALL
SAN FRANCISCO 2
CALIFORNIA

Annual Report
1953-1954

Honorable Thomas A. Brooks
Chief Administrative Officer
City and County of San Francisco

Dear Sir:

In accordance with the provisions of Section 20 of the Charter of the City and County of San Francisco I submit herewith the Annual Report of the Department of Public Works for the fiscal year ending June 30, 1954.

The report follows the same pattern as last year's report and is divided into nine separate sections covering the activities of the nine bureaus of the department. Summaries of current contract data appear under Appendixes 1 and 11. A summary of the operational data for the Sewage Treatment Plants is being compiled under a separate report which will be made available to those interested at a later date.

On August 28, 1953, Mr. Dodge A. Riedy, City Architect, passed away. Mr. Riedy was a fine Architect who served the City well and his passing was a great loss to the Department.

The work loads of both the Bureau of Engineering and the Bureau of Architecture continues to be very heavy. The approval of the electorate on June 8, 1954 of a Sewer Bond issue in the amount of \$12,645,000.00 will increase the total of unspent bond issue and gasoline tax monies to be administered by the Bureau of Engineering as of June 30, 1954 to \$34,015,951.00. Because of the difficulties in obtaining sufficient qualified engineers in City Service it is my firm opinion that we must call on private engineering firms to assist the Department in the preparation of plans and specifications for some of this work.

All bureaus carried on their assigned functions in a fine efficient manner and the detailed listing of these activities, as prepared by the head of each bureau is contained in the attached report.

In addition to the normal activities of the Department a departmental safety program has been carried on during the past year resulting in a decrease of approximately 17% percent in the number of

lost time accidents between this year and last year. The Department has also participated in all City-wide drills of the San Francisco Disaster Council and Corps both at Master Control Center and in the field.

I must thank both Assistant Directors of the Department, all Bureau Heads and their staffs, for the fine co-operation and loyalty shown during the year. I am again indebted to Mr. R. G. Wadsworth, City Engineer, for assembling the report. I am also very grateful to you, Mr. Brooks, for your generous help and support in all matters pertaining to the department.

Respectfully submitted,

Sherman P. Duckel -

Sherman P. Duckel, Director
Department of Public Works

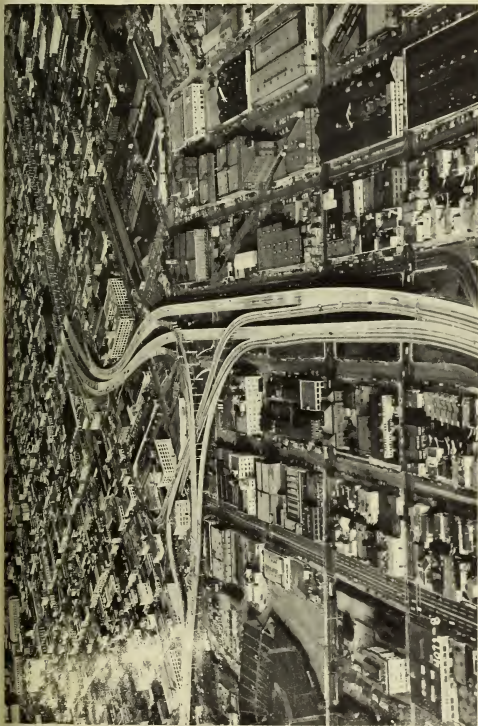
Report
1954

Department
San Francisco
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JAMES LICK MEMORIAL FREEWAY
With 13th Street Connections

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

ORGANIZATION CHART

JUNE 30, 1954

CITY ENGINEER
ASST CITY ENGINEER

STAFF DIVISIONS

**CONTRACT
ADMINISTRATION**
PAYMENTS-RECORDS

**OFFICE
MANAGEMENT**
PERSONNEL-PURCHASING

LINE DIVISIONS

**DIVISION OF
STREETS & HIGHWAYS**

- 1-STREET IMPROVEMENTS
 - (a) IMPROVEMENT PLANS
 - (b) ASSESSMENTS
 - (c) PERMITS & INSPECTIONS
 - (d) PLANS & RECORDS
- 2-HIGHWAYS
- 3-TRACK REMOVAL CONTRACTS

**DIVISION OF
DESIGN**

- 1-ADMINISTRATIVE
- 2-STRUCTURAL
- 3-SEWERS
- 4-SEWAGE DISPOSAL
- 5-MECHANICAL
- 6-ELECTRICAL
- 7-UNDERGROUND STRUCTURES
- 8-HYDRAULICS
- 9-SPECIFICATIONS & ESTIMATES

LINE DIVISIONS

**DIVISION OF
TRAFFIC ENGINEERING**

- 1-DESIGN
- 2-OPERATION
- 3-MAINTENANCE

**DIVISION OF
SURVEYS & MAPPING**

- 1-STREET GRADES
- 2-SUBDIVISIONS
- 3-SURVEYS

LINE DIVISIONS

**DIVISION OF
CONSTRUCTION**

- 1-INSPECTION
- 2-TESTING LABORATORY
- 3-SANITARY FILL
- 4-RECORDS REPORTS

**DIVISION OF SEWAGE &
WASTE TREATMENT**

- 1-RICHMOND SUNSET PLANT
- 2-NORTH POINT PLANT
- 3-SOUTHEAST PLANT
- 4-INVESTIGATIONS

Ralph G. Wadsworth, City Engineer

GENERAL REVIEW OF YEAR'S WORK

The Bureau of Engineering performed its usual functions through the year consisting principally of general engineering services, planning and supervision of construction contracts, and the operation of the sewage treatment plants. There was a noticeable increase in the number of engineering surveys and studies performed for other bureaus of the department and for other departments of the City government. There was also a distinct increase in the number of construction contracts involving special types of work not directly connected with streets and sewers, which are normally the principal care of the bureau.

GENERAL ENGINEERING SERVICES

The Bureau of Engineering conducted a wide variety of proceedings and services in connection with construction and maintenance of streets and sewer systems and in furnishing advice and information to the public and to other City departments. The Bureau issued 15 Street Improvement Assessments, approved 16 Private Street Improvement Contracts, posted 442 Field Notices, checked and approved 3 new subdivisions, inspected sidewalks on 26,613 lot frontages, issued 3,758 notices to property owners about sidewalk repairs, inspected 13,387 pavement excavations, made 223 field surveys, prepared 8 maps of public building sites, established 2,305 precise bench marks, performed 2,035 laboratory tests, and investigated 227 damage claims. In addition, the Bureau investigated and reported on numerous matters referred to it for consideration by various City officials and private organizations and individuals.

CONTRACT VOLUME

The total value of contracts awarded, on the basis of plans and specifications prepared by the bureau, was \$3,875,771 which is the lowest total since 1947-1948, and is little more than half of last year's total volume. On the other hand, the number of contracts prepared and supervised was nearly the same as last year, being 114 as compared with 118.

Bureau of Engineering

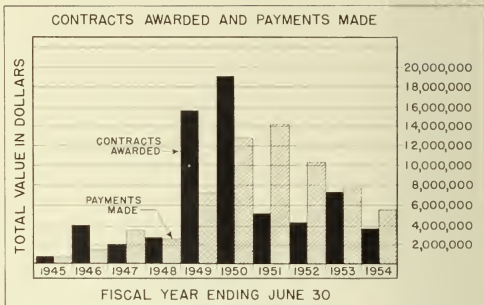


Fig. I

SPECIAL PROJECTS

The decline in contract volume as compared with the preceding year was due, in part, to the small size of the construction jobs undertaken and, in part, to the large amount of engineering work which was necessarily devoted to a number of special types of projects, including several of an emergency nature. Some of these unusual projects are described below because of their general interest.

Municipal Asphalt Plant

A new Municipal Asphalt Plant designed by the Bureau was put out for bids in September 1953. The low bid received on September 23, 1953 was substantially in excess of the funds available and a request was sent to the Board of Supervisors for a supplemental appropriation of \$190,000. This action prompted some of the general contractors, particularly those engaged in paving work, to voice strong objection to the construction of a new asphalt plant, although the City had been

Bureau of Engineering

operating its own plant for the past forty-five years. In spite of such objections and after a number of public hearings and the submission of much supplementary engineering information, the additional funds were eventually provided and the construction contract was awarded on May 5, 1954 at a price of \$407,101.

Islais Creek Bridge

A project requiring an unusual amount of attention on the part of the structural and mechanical staffs was an emergency contract for certain repair work on the operating mechanism at the Islais Creek double-leaf bascule bridge. Around the first of October 1953 it had been noted that the reinforced concrete columns which support the main bearings of the driving pinions contained numerous cracks and were in such condition that they no longer afforded the necessary support and restraint of the pinion shaft while the bridge leaf was being operated. This resulted in partial disengagement of the pinions from the gear quadrants that raise and lower the two main leaves of the bridge. There was considered to be a real danger that continued operation of the bridge might cause further weakening of the assembly with the possibility of great damage to the operating mechanism and even to the structural members of the bridge leaves. Consequently, the Director of the Department declared an emergency and repairs were undertaken immediately under the supervision of the City Engineer. The concrete supporting columns for the pinion bearings were replaced by structural steel members adequately braced to the adjoining structure at a cost of \$33,325. The work was completed on January 8, 1954. During the progress of the work it was necessary to close the Islais Creek Channel to navigation for a period of 21 days from October 8 to 28, 1953. This caused some inconvenience to shipping and has resulted in certain claims for reimbursement of extra cargo handling costs.

Slide Correction

An unusual amount of engineering work went into the analysis of slide conditions at four different locations. While the resultant contracts were not large, the amount of time and effort devoted to them was out of proportion to the contract cost. Two of the slides are still active and are receiving continuous attention.

Market-Portola Improvement

During the last half of 1953 field surveys were made of Market Street between Eighteenth Street and Corbett Avenue to serve as a basis for detailed planning of the widening and realignment of this thoroughfare. On April 20, 1954, a measure

Bureau of Engineering

was submitted to the Board of Supervisors declaring the necessity of proceeding with the project and authorizing the purchase of the needed additional right-of-way. The discussion before the Board of Supervisors promptly raised a large amount of opposition from property owners who would be affected by the improvement and the debate on the matter was carried on for weeks and had not reached a conclusion by June 30, 1954. The Bureau of Engineering devoted a large amount of time and effort to providing detailed information about the project to the Board of Supervisors and to the numerous private parties who had special interests in the matter. The proposal before the Board of Supervisors was eventually broadened to include both the improvement of Upper Market Street and the widening of Portola Drive. The present plan is to construct a four-lane divided highway with some improvement of alignment, particularly on the Market Street portion. The present 70-foot right-of-way will be widened to 84 feet through the Market Street portion of the job and to 92 feet along Portola Drive.

CONTRACT SUMMARY

A summary of all contracts awarded during the fiscal year, including those carried over from the preceeding year, is shown in Table I. The tabulation also shows the total value of the work actually performed during the year on all contracts which were active, including those awarded but not completed in preceeding years.

Bureau of Engineering

TABLE I
CURRENT CONTRACT DATA SUMMARY
SHOWING ALL CONTRACT WORK AWARDED OR UNDER WAY
JULY 1, 1953 to JUNE 30, 1954

Table	Type of Construction	No.	Contracts Awarded Aggregate Value	Amount Expended Fiscal Year 1953-54
A	Major Thoroughfares	3	\$ 210,434.10	\$ 727,043.52
B-1	Streets - Private Contracts	16	179,000.00	248,855.00
B-2	Streets - Assessment Proceedings	15	126,987.60	160,873.62
B-3	Streets - Public Contract City Pay	17	332,869.11	266,325.79
B-4	Street Car Track Removal	10	1,509,974.01	1,478,916.96
C	Traffic Signals and Channelization	9	242,966.50	515,914.92
D-1	Sewers - Pipe, Vitrified Clay and Concrete	10	540,494.30	557,765.77
D-2	Sewers - Concrete Monolithic	1	37,885.00	1,305,317.34
E	Miscellaneous	33	695,160.07	363,302.63
TOTALS		114	\$3,875,770.69	\$5,624,315.55

Table I shows the number and value of the contracts which were awarded for each of nine different classes of work. The figures shown in the column headed 'Amount Expended' represent the approximate amount of payments made to the contractors during the year. It will be noted that the amount expended exceeds the value of the contracts awarded due to the fact substantial payments were made on contracts which had been awarded in the preceding year. A detailed listing of the contracts under way during the year will be found in Appendix I. A separate tabulation is given for each of the above categories of construction

Bureau of Engineering

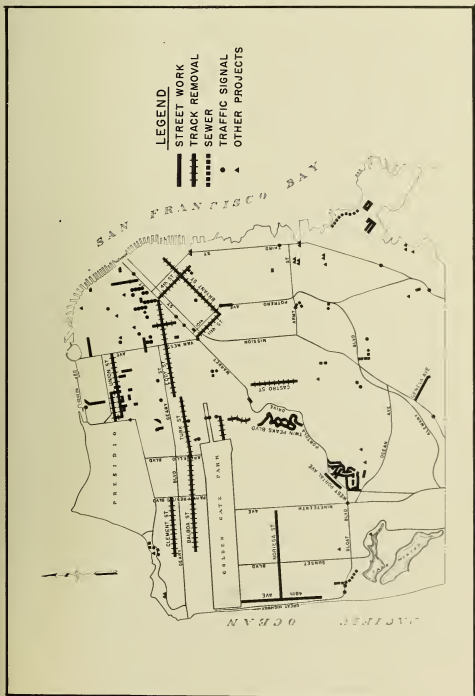
work, the various tables being designated by the letters and figures shown in the first column of the above summary.

By comparing Table I with the similar tabulation in last year's report, it will be noted that there was a sharp decline in the number of major thoroughfare contracts and private street improvement projects. On the other hand, the number of contracts and the value of the work under the heading of 'Miscellaneous' was greatly increased due to the large number of special types of work undertaken by the Bureau.



EIGHTEENTH STREET SEWER

Bureau of Engineering



LOCATION OF CONTRACTS AWARDED 1953-54
FIG. 2

Bureau of Engineering

CONSTRUCTION WORK UNDERTAKEN

The accompanying map entitled 'Location of Contracts Awarded 1953-54 (Fig. 2) indicates the location of the contracts awarded during the year so far as it is possible to do so. Some of the principal accomplishments under the headings of 'Sewers', 'Streets', 'Signals' and 'Miscellaneous' are described briefly in the following paragraphs.

Sewer Projects

A new sewer running, in part, through the Fleishhacker Zoo was constructed to provide an urgently needed outlet for a new subdivision called Lakeshore Country Club Acres. Sewer replacements and enlargements designed to prevent flooding were undertaken in El Camino Del Mar, Silver Avenue, Bluxome Street, Cortland Avenue, and at the Rush and Mason Streets intersection. Units of the sewage collection system undertaken during the year included the Hunter's Point Sewage Pumping Station and connecting sewers. Construction was also started on the Pine Lake Pumping Station at the westerly end of Sigmund Stern Grove.

Street and Highway Work

Contract awards for street and highway work amounted to \$2,053,277 and will account for the improvement of 32.23 miles of streets. The work undertaken included widening of Twin Peaks Boulevard, the reconstruction of Geneva Avenue east of Mission Street, and the construction of an extension of Masonic Avenue northerly from Euclid Avenue. The last contract under the original track removal program was awarded bringing the aggregate length of street improvement by this program to a total of 102.56 miles. The cost of this kind of work has been substantially less than the amounts provided by the 1947 Street Improvement Bond Issue and it is planned to undertake at least 6 miles of track removal work not originally contemplated.

Traffic Engineering

Channelization projects of special interest were completed on Laguna Honda Boulevard in the vicinity of Forest Hill Station and also at the main entrance into Golden Gate Park at Stanyan Street. Signals were modified to provide for the 'scramble system' of traffic control on Montgomery Street and also to accommodate some of the newly established one-way streets. The Traffic Engineering Division developed a 24-hour traffic flow map, planned the installation of 90 modern traffic

Bureau of Engineering

signals, installed 1,311 new traffic signs, 254 street name signs and 702 parking meters, and supervised the painting of 365 miles of traffic striping. Contracts awarded for signals and channelization amounted to a total of \$242,966.

Miscellaneous Projects

Some of the special types of projects in this category were mentioned above. Others worthy of mention include the relocation of a high pressure water main in Harrison Street to accommodate State Freeway construction, minor improvements at the sewage treatment plants and reconstruction of the deck of the Third Street Bridge over the Channel Street Waterway.

FREEWAY PROGRAM

A number of conferences were held with the District officials of the State Division of Highways with reference to the future planning of the freeway program in San Francisco. The State has adopted a general freeway layout conforming quite closely with the Master Plan for Trafficways adopted by the City Planning Commission on July 18, 1951. The major part of the proposed freeways follow State Highway Routes within the City and can be legally undertaken with State Highway funds. The Division of Highways expects to have available in excess of \$12,000,000 per year for construction of freeways within San Francisco over the next several years. It is expected that the California Toll Bridge Authority will also have funds for certain freeways in San Francisco when the Southern Crossing of San Francisco Bay is financed, as now contemplated by the so-called 'Dolwig Act', passed at the last session of the legislature.

Leaving to these State agencies such freeway work as they are empowered to undertake, the principal freeways remaining for City financing are the Cross-town Freeway, following the general location of O'Shaughnessy Boulevard, and a unit of the proposed Southern Freeway running from the Bay Shore Freeway at Alemany Boulevard to the proposed Tennessee Street Freeway at a point near the approach to the Southern Bay Crossing. It is proposed to undertake the latter unit first with a view to having it completed when the Southern Crossing is ready for traffic. The preliminary estimated cost is \$13,000,000 which probably can be financed by present balances and future allocations of gas tax funds. Figure 3 shows the general layout of the Freeway System in San Francisco and indicates those portions of the State program which were completed or contracted for as of June 30, 1954.

CONSTRUCTION FUNDS

Special attention was devoted toward the end of the year to the budgeting of available funds to future construction projects. The Street and Highway program is financed mainly by allocations of State Gas Tax Funds, although bond funds have been available for the removal of street car tracks and a few specially designated projects. The sewer program has been financed principally by Bond Issues which were voted in 1944 and 1948. The balances in the various accounts on June 30, 1954 are shown in Table II.

TABLE II

Fund	Balance
Special Road Improvement Fund:	\$ 2,078,121.54
Special Gas Tax Street Improvement Fund:	8,982,907.72
1947 Street Improvement Bond Fund:	7,365,456.36
Sub-Total Street Funds	\$18,426,485.62
1944 Sewer Bond Fund:	\$ 1,284,139.55
1948 Sewage Treatment Bond Fund:	1,660,327.30
1954 Sewer Bond Fund:	12,645,000.00
Sub-Total Sewer Funds	\$15,589,466.85
Total	\$34,015,952.47

Street Funds

The gas tax and street bond funds shown in Table II are completely allocated to projects except for \$3,936,836.85 which is held in unallocated accounts. A thorough analysis of all authorized projects was made and it was found that some of them could be considered completed or abandoned with resultant release of unused appropriated funds, and that other projects could be completed in the future at amounts less than appropriated. As a result of this study, it was determined that \$6,388,728.55 could be made available for reappropriation to new major projects such as those included in the City's freeway program.

Bureau of Engineering

Sewer Funds

Funds in the 1944 and 1948 Bond funds for sewer construction and completion of the sewage disposal systems were nearly exhausted by the end of the year, as indicated in Table II above. To bring this matter to the attention of City Administration and the public in general, the Bureau of Engineering prepared a Progress Report in April 1954 on 'San Francisco's Sewerage Program'. The preparation of the report and the presentation of this and other material during the months which followed required a substantial amount of time and effort on the part of the design staff. These efforts received support from many sources and culminated in the passing of the new Sewer Bond Issue on June 7, 1954, in the amount of \$12,645,000 by a vote of 109,375 to 54,504.

SEWAGE PLANT OPERATION

The three sewage treatment plants operated continuously throughout the year treating sewage from all parts of the City except limited areas along the bay shore. Operation on a 24-hour day, 7-day week, requires the employment of 100 men for the three plants. The total cost of operation is about \$800,000 per year. The sale of dried sludge at a contract price of \$5 per ton brings in a net revenue of approximately \$13,000 per year.

The major areas along the bay shore still discharging untreated sewage into the bay will be brought into the treatment system by means of the additional sewers and pumping stations to be built under the recently approved Bond Issue. At the same time, efforts are being made to bring about the construction of similar facilities by the Navy Authorities at the San Francisco Naval Shipyard, the State Board of Harbor Commissioners, and the management of some of the shore line industries. Although a good deal remains to be done, the sewage treatment program has already produced very substantial results in abating pollution of San Francisco's shore waters.

SEWERAGE SYSTEM

In the spring of 1954 a complete review of the sewerage program was made for the purpose of appraising the work completed to date and developing a program for required future construction. A report issued in April showed that over \$36,000,000 had been spent on construction work since 1933 when the need of sewage treatment was first fully realized. The principal projects completed during that period are shown on the accompanying map (Fig. 4). The map shows the three sewage treatment plants now finished and in operation, and includes the collecting systems so far completed. About \$25,000,000 was spent on the treatment plants and the interceptors, diversions, pumping stations and outfalls in connection therewith. The other sewers shown on the map are principally large storm and sanitary sewers which were built to prevent flooding of public streets and private property and to provide outlets for new land developments. During the year 1953-54 substantial progress was made on the construction of both storm and sanitary sewers and units of the sewage collection system.

STORM AND SANITARY SEWER CONSTRUCTION

During the past year sewer contracts awarded included an outlet for a major subdivision development, some replacements of settled or defective sewers, and a number of enlargements where the old sewers were inadequate. Particulars of the various contracts completed or awarded during the year are to be found in Tables D-1 and D-2 of Appendix I. Several of the more noteworthy projects are described briefly in the following paragraphs.

Skyline-Sunset Outlet Sewer

In order to provide an outlet sewer for Lakeshore Country Club Acres subdivision, a 48-inch diameter reinforced concrete pipe sewer was constructed from Skyline Boulevard westward through Fleishhacker Zoo to 44th Avenue and Vicente Street. The greater portion of the sewer through the zoo, due to a restricted location in the slope area south of Sloat Boulevard, was constructed on new fill and has double rubber gasket pipe joints. The fill was compacted under rigid control and the slopes are to be planted with iceplant.

El Camino Del Mar and Sea Cliff Avenue Sewer

A contract was awarded for a sewer in El Camino del Mar and Sea Cliff Avenue from Lake Street to 27th Avenue in order



SEWERAGE WORKS COMPLETED 1933-1954
Fig. 4



SKYLINE SUNSET OUTLET SEWER

to prevent flooding, particularly near Lake Street and 30th Avenue, as evidenced by complaints from 13 residents in this vicinity. Construction will consist of 15-inch to 30-inch diameter V.C.P. sewers replacing 12-inch to 18-inch diameter inadequate sewers.

Silver Avenue Sewer

To prevent complaints and flooding of homes and stores in the vicinity of Silver Avenue and Madison Street, a new sewer was constructed in Silver Avenue from Gambier Street to Congdon Street and in Congdon Street from Silver Avenue to Alemany Boulevard. The job consisted of 24-inch diameter V.C.P. on concrete foundation and of 30-inch to 36-inch diameter reinforced concrete pipe.

Bluxome Street Sewer

A new 21-inch diameter V.C.P. sewer encased in concrete was constructed in Bluxome Street easterly from 5th Street for 450 feet in order to replace an old settled, clogged, and inadequate 15-inch diameter pipe sewer. A new and irregular alignment, including a short easement over private property at the southeast corner of 5th and Bluxome Streets, was necessary to avoid interference with the heavily travelled spur tracks and with the fire cistern at 5th Street.

Bush and Mason Streets

A contract was awarded for a 30-inch reinforced concrete pipe connection from the sewer in Bush Street to the sewer in Mason Street so as to divert the Mason Street flow to the Sutter Street sewer and lower the hydraulic gradient in the Mason Street sewer at Burritt Place. This construction was undertaken to prevent the frequent flooding of Burritt Place which had already resulted in one successful damage suit against the City. During construction the contractor elected to tunnel under the Bush and Mason Streets intersection and thus avoid the dense overlying network of utility pipes and ducts.

Cortland Avenue

In order to prevent flooding along Cortland Avenue and at the intersection of Bay Shore Boulevard a contract was awarded for a new sewer consisting of 36-inch and 54-inch monolithic reinforced concrete sewer and 33-inch V.C.P. sewer on reinforced concrete foundation to replace the inadequate existing 18-inch pipe sewer. The use of 33-inch clay pipe instead of a more expensive monolithic sewer was a departure from the City's former

limitation of the use of such pipe to sizes not over 24 inches in diameter.

Pine Lake Pumping Station

Construction was begun on a new sewage pumping station at Pine Lake Park to replace a small temporary station built many years ago. It will serve the park facilities when they are developed as well as the tributary residential area.

COLLECTING SEWER CONSTRUCTION

Hunter's Point System

An important unit of the collecting system for the Southeast District was undertaken early in the year and nearly completed by June 30, 1954. It consists of a large pumping station located north of Hunter's Point Boulevard at Hudson Avenue, together with collecting sewers and a force main which runs along Evans Avenue to its intersection with Keith Street. From that point the flow will go by gravity to the Southeast Plant. In anticipation of the future deep fill on Hudson Avenue to meet the grade of Hunter's Point Boulevard, the pumping station is designed to take the added earth load and to permit entry from the present roof level.

Units Completed During Year

Three units of the Southeast Collecting System started during the preceding fiscal year were completed and placed in operation namely, Hunter's Point Tunnel, Mariposa Diversion and Pumping Station and the first unit of the Mendell Outfall and Diversion, all of which were described on Pages 20 and 21 of last year's report. Completion of these projects has substantially increased the volume of sewage diverted from shore outfalls into the Southeast Sewage Treatment Plant. Completion of the Mendell Street project was of a special local importance since it diverts particularly objectionable meat processing sewage that has for many years been an offense as it stagnated in channels through the adjacent tideland filling development.

North Point Collecting System

Planning of the North Point Collecting Sewers progressed during the year. A sewer gauging program, essential to the determination of sewage flows to be handled, was planned and executed. Studies were made of a number of alternative schemes involving different sites and numbers of pumping stations and various collection patterns. This permitted a determination

of the most economical and desirable solution before proceeding with the final detailed plans for the several contracts under which construction will be effected.

FUTURE PROGRAM

The 1954 review of the City's future needs indicated that the construction of all remaining sewerage works which can now be foreseen will cost about \$25,000,000 at present prices. Some of the necessary projects can be deferred for a few years but those of immediate urgency are estimated to cost approximately \$12,645,000 and this is the amount which was provided for future work by a Bond Issue approved by the voters in June 1954.

The accompanying map (Fig. 5) shows all the sewers contemplated but distinguishes between those which were financed



SEWERS AND PUMPING STATIONS REQUIRED

Fig. 5

Bureau of Engineering

previously, the urgent projects to be financed by the new Bond Issue, and the projects which are deferred to some future date. The sewers indicated on the map in the vicinity of the bay shore are principal units of the collecting systems still to be built. In other areas of the City the proposed new sewers are in part to provide outlets for new subdivisions and in part to relieve flooding conditions such as those which have occurred during recent wet winters. Approximately half of the proceeds of the new Bond Issue will be spent on the sewage collection and disposal systems, and the remainder on major storm and sanitary sewers.



MARIPOSA DIVERSION STRUCTURE
AND SEWAGE PUMPING STATION

1954 BOND PROJECTS

The urgent projects to be financed from proceeds of the new Bond Issue are numbered on Figure 5 to conform with the following list:

Description	Estimated Cost
Treatment Plant Improvements	
12. North Point Plant	\$ 110,000
13. Southeast Plant	110,000
14. Richmond-Sunset Plant	80,000
Collecting Sewers	
15. Sunnydale Diversion and Candlestick Sewer	350,000
16. Candlestick Tunnel and Ingalls Avenue Sewer	1,120,000
17. Sansome-Vallejo-Embarcadero Area	250,000
18. Jackson-Drumm Area	1,250,000
19. South of Market Area	1,000,000
20. Division-7th-Berry Area	2,050,000
35. Islais Creek Area	400,000
Other Sewers	
21. Mendell Street Sewer Extension	690,000
22. Sewer in State College	95,000
23. Arguello Boulevard: Geary-McAllister	260,000
24. 5th Street: Shipley to Harrison	300,000
25. 29th Street: Dolores to Castro	200,000
26. Potrero-Alameda-Berry-7th Streets	750,000
27. Vicente Street: 37th-42nd Avenue	220,000
28. Lincoln Way and 14th Avenue	1,500,000
29. Anza-8th Avenue-Geary	300,000
30. 3rd Street: Arthur-Fairfax	310,000
31. 25th and Church to 24th and Noe	350,000
32. 23rd Street: Iowa-3rd	200,000
33A. Pine and Broderick Streets	250,000
33B. Indiana and Maryland Streets: Marin to Islais Creek	150,000
34. Illinois Street: Marin-23rd	350,000
Total Estimated Cost	\$12,645,000

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STREET AND HIGHWAY IMPROVEMENTS

Thirty street and highway contracts were awarded during the fiscal year 1953-1954 as listed in Tables A, B-3 and B-4 of Appendix I. They aggregated \$2,053,277.22 and accounted for the improvement of 32.23 miles of streets.

MAJOR THOROUGHFARES

Three contracts, classed as major thoroughfare improvements having a total length of 2.45 miles are described briefly in the following paragraphs.

Twin Peaks Boulevard Widening

A trip to the ceiling of San Francisco over Twin Peaks Boulevard has, ever since the road was constructed in 1916, been one of the City's foremost tourist attractions. Great numbers of visitors and residents make the trip by day and by night to take in the marvelous vistas of the Bay Area. To make the trip safer and more enjoyable, a contract was let to widen and resurface the roadway and eliminate several of the sharpest curves. The work was practically completed by the end of the year and had been done without denying access to the famous Peaks.

Geneva Avenue Reconstruction

This project consists of a complete reconstruction of a portion of one of the main routes of travel between the heavily populated Mission District and the southeast industrial area of the City. For many years the condition of the pavement on Geneva Avenue from Mission Street to Prague Street was a source of annoyance to motorists and a source of heavy maintenance expense to the City. The contract which was let in the latter part of March is expected to be finished in August. It will provide a four-lane divided roadway with ample parking space for shoppers and residents.

Masonic Avenue Extension

As a means of expediting and safely controlling traffic westbound from the Presidio Avenue termination of Pine Street, a contract was awarded for the extension of Masonic Avenue from Euclid Avenue diagonally through City-owned property to Presidio Avenue at Pine Street. Although the work will cost only about \$47,000 it will be of benefit to many motorists as it will eliminate conflicting movements of traffic at the Pine Street-Presidio Avenue intersection and a hazardous left-turn from Euclid Avenue to Masonic Avenue.

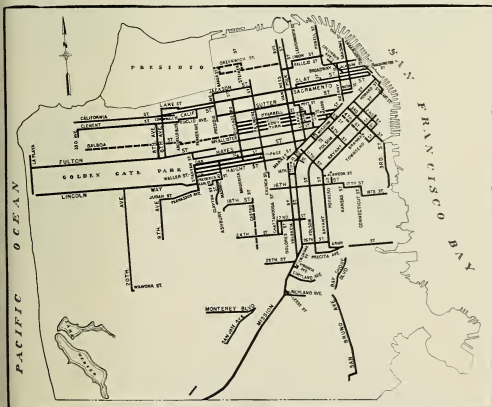
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STREET IMPROVEMENTS

In addition to the major thoroughfare improvements described above, seventeen contracts amounting to \$332,869.11 were awarded for various types of street improvements. These contracts will account for the improvement of 17.02 miles of City Streets. They include initial street work in front of various pieces of City property, resurfacing of old pavements, replacement of brick paving with concrete and widening by curb setback.

TRACK REMOVAL AND STREET RECONSTRUCTION

The final contract of the original track removal program financed by the 1947 Street Improvement Bond Issue was awarded on June 2, 1954. The program, however, was expanded in February 1954 by the Board of Supervisors to include an additional 6.21



TRACK REMOVAL PROGRAM
to June 30, 1954
Solid Lines - Work Completed
Dash Lines - Work Under Way

Fig. 6

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LAGUNA HONDA BLVD. - CLARENDON AVE. TO DEWEY BLVD.
Before Street Widening and Channelization



LAGUNA HONDA BLVD. - CLARENDON AVE. TO DEWEY BLVD.
After Street Widening and Channelization

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miles of double track which were abandoned after the adoption of the original program. This expansion was made possible by the saving in bond fund expenditures brought about by keen competition among contractors and by the use of gas tax funds as a supplementary source of financing.

At the end of the year work had been completed or was under way on 102.56 miles of streets. An accompanying map (Fig. 6) shows this work. Ten contracts, aggregating \$1,509,974.01, were awarded during the year for the improvement of a total length of 12.76 miles of streets. These contracts, together with those which were carried over from last year, are listed in Table B-4 of Appendix I.

It is anticipated that by the end of the 1955 calendar year all abandoned tracks, with the possible exception of such cable car lines as may be discontinued in the meantime, will have been removed from the streets of San Francisco.

MAJOR HIGHWAY PROJECTS COMPLETED

Of the highway projects started last year and completed this year, two are worthy of special mention as they have expedited the smooth flow of large volumes of traffic by eliminating hazardous bottlenecks. They are included in the list of Major Thoroughfares in Table A of Appendix I and were described on page 31 of the previous Annual Report under the titles 'Laguna Honda Boulevard Widening' and 'Channelization of Main Drive and Panhandle at Stanyan, Fell and Oak Streets'.

PLANS FOR FUTURE WORK

A number of street and highway improvement projects are scheduled for construction during the coming fiscal year, and plans for many of them are nearing completion. The more important ones, together with estimated costs, are shown below in the approximate order in which they will be undertaken:

Portola Drive: Woodside-Corbett	Realign	\$ 215,000
13th Street: Mission-Bryant	Widening	320,000
Geneva Avenue: San Jose-Tara	Extension	100,000
Clarendon Avenue: Laguna Honda-Stanyan	Widen	170,000
Skyline Boulevard: Lake Merced-County Line	Widen and Realign	500,000

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Geary Boulevard: 33rd Avenue-48th Avenue	Track Removal	\$ 150,000
San Jose Avenue: Niagara-County Line	Track Removal	150,000
Stockton Street: Market- Columbus)))	
Columbus Avenue: Stockton- North Point)))	
North Point Street: Columbus-Van Ness) Track Removal))	500,000
Chestnut Street: Van Ness- Scott))	
Silver Avenue: Mission- Palou	Reconstruct	600,000
Lake Street: 6th Avenue- 28th Avenue	Reconstruct	262,000
Total Preliminary Estimated Cost		\$2,967,000

In addition to the above, final plans will be completed for the widening and realignment of Upper Market Street and plans for the improvement of Portola Drive will be started. Preliminary planning will also be started for the section of the Southern Freeway which will link the Southern Crossing to the Mission Freeway.

TRAFFIC ENGINEERING

ADMINISTRATION

During the fiscal year 1953-54, the responsibility for the design and management of the City's traffic control facilities was still divided between the Police Department and the Department of Public Works without clear definition of their respective functions. In general the traffic engineering budget and the technical personnel remain in the Department of Public Works where the engineering recommendations are made, while the final authority for approval of all installations rests with the Police Department. A typical effect last year was a prolonged discussion between the two departments as to the proper type of

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traffic signals for one-way streets, which caused several months delay in the planning of the systems for Oak, Fell and Turk Streets and Golden Gate Avenue.

OFF-STREET PARKING

Three off-street parking surveys were made during the year for the San Francisco Parking Authority. In the first study it was concluded that a garage of a maximum size of 300 stalls would be economically feasible in the Nob Hill area. The second study was concerned with the much publicized Lurie plan for the construction of a huge 3,750 stall garage on Mission Street between Third and Fourth Streets and a smaller garage of 1,179 stalls in the block bounded by Grant Avenue, Sutter, Bush and Stockton Streets. The Bureau study, which became the center of heated debate, indicated that the construction and operation of these garages in the manner proposed would not be feasible under revenue bond financing. The final report entitled 'A Downtown Parking Program' issued in February 1954 was a long range plan for a series of garages in strategic locations with a combined capacity of 5,690 vehicle stalls and a cost of approximately \$17,754,000 for land and construction.

TRAFFIC PLANNING

The Division of Traffic Engineering had the opportunity during the past year to participate with the engineers of the State Division of Highways in the planning of on and off ramps from the Bayshore Freeway at Seventh Street and Fourth Street, and also similar planning with reference to the Embarcadero Freeway ramps at Beale and Main Streets, and the Thirteenth Street lateral connections at Mission Street and South Van Ness Avenue. Recommendations were also made to the State engineers with reference to contemplated traffic improvements on Alemany Boulevard in the vicinity of Alemany Circle and the Farmer's Market Intersection.

The Traffic Engineering Division also prepared layouts for channelization work in connection with a number of City projects, including the widening of Clarendon Avenue, the improvement of Geary Boulevard from 33rd Avenue to 48th Avenue, and the channelization of the intersections of the Great Highway with Main Drive and Fulton Street.

BAY SHORE FREEWAY EXTENSION

On October 1, 1953 a new section of the Bay Shore Freeway was opened to traffic from Army Street to Bryant Street with on and off ramps at the intersections of Tenth and Ninth Streets.

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This new facility attracted large volumes of traffic and, with only one outlet at Ninth and Bryant Streets, in-bound traffic was backed up for a long distance during the first two or three days. To relieve this situation the State constructed a temporary off-ramp in the vicinity of Vermont and Seventeenth Streets. The City cooperated in the installation of special striping and signing at the temporary off-ramp as well as the access points at Ninth and Tenth Streets.

The opening of the new freeway section immediately changed traffic volumes on major streets in the vicinity. It was found, for example, that the 24-hour volume on Alemany Boulevard increased from 20,000 vehicles to 33,000 vehicles, while the volume on Potrero Avenue dropped from 39,000 to 15,000 vehicles.

TRAFFIC SIGNAL INSTALLATIONS

About \$243,000 in traffic signal and channelization contracts were awarded during the fiscal year 1953-54. The individual listings of these contracts are shown in Table C of Appendix I. In addition, a number of signal installations and channelizations were included in contracts classified as street improvement projects. Two signal contracts in the list deserve special mention.

Scramble System

A trial installation of the so-called 'scramble system' was placed in operation on March 4, 1954 at four consecutive intersections along Montgomery Street from Sutter Street to California Street. The installation required some new signals and modification of existing signals in such manner as to provide a separate phase for pedestrians. Careful studies of traffic and pedestrian movements were made both before and after the installation of the new system. It was found that vehicular travel time through the system had increased about 50 percent. Nevertheless, a public opinion poll of both pedestrians and motorists indicated that the new plan was popular. Because of the clearly indicated delay caused by the 'scramble system', it is not anticipated that additional installations will be undertaken.

Powell Street Signals

A special traffic signal contract was the modification of existing signals and addition of some new signals on Powell Street between California and Sutter Streets for the dispatching of cable cars up and down Powell Street in such manner as to

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minimize conflicts between the cable cars and heavy cross vehicular traffic on Pine and Bush Streets. The initial installation was moderately successful but considerably more study is required and is still in progress for improvement of this sensitive traffic area.

All Night Signal Operation

Pursuant to an order of the Police Commission, the operation of traffic signals on a flashing basis during the late evening and early morning hours was discontinued in December 1953 and all signals now operate normally 24 hours per day. The stated purpose of the change was to increase traffic safety during the early hours of the morning. The change was not recommended by the Department of Public Works. Studies of accidents at signalized intersections before and after the change in operation have not yet been made.

Mission District System

The Mission District traffic signal system described in the last Annual Report was completed insofar as the basic installation was concerned. However, certain mechanical defects have remained a problem for correction by the Contractor. As a result, even though all signals are being used, the Contractor is making changes in equipment and has not as yet turned the signals over to the City.

CHANNELIZATION PROJECTS

Channelizations of special note completed in 1953-54 are the intersection of Woodside Avenue, Dewey Boulevard and Laguna Honda Station; the intersection of the Panhandle, Main Drive and Stanyan Street; and the intersection of Columbus Avenue, Green and Stockton Streets. The first two installations required elaborate changes of the surrounding area at considerable cost to the City. They have produced major improvements and have received favorable recognition by the public. The plans for the rearrangement of roadways in the Panhandle-Main Drive area received some initial opposition because of drastic changes in the appearance of the main entrance to Golden Gate Park. The changes, however, were readily accepted by the Recreation and Park Commission and in general have been approved by the public since the completion of the work.

ONE-WAY STREETS

Extension of the One-Way Street System continued with approximately 10.7 miles being added. The principal amount of this mileage, however, was in alleys where one-way operation was needed to facilitate general local traffic flow on cross streets. Major

one-way streets which were added during the year were the combination of Oak, Fell and Hayes Streets on the north side of Market with Ninth and Tenth Streets on the south side of Market on August 8, 1953, and the additions of Seventh and Eighth Streets south of Market with the companion streets on the north side on May 5, 1954. The introduction of these one-way operations was coordinated with the openings of different sections of the Bay Shore Freeway.

TRAFFIC SIGNS

The San Francisco 49-mile scenic drive, which, undoubtedly, is routed through some of the most beautiful and colorful scenery in the world, has been resurveyed by the Traffic Engineering Division. Some changes in the route have been made so as to include views of new San Francisco areas such as the San Francisco State College, Stonestown, University of California Hospital and the Bay Shore Freeway. Also, recommendation has been made for a larger and more colorful sign to be installed at more frequent locations in order that tourists and natives alike can follow the route more easily. The Downtown Association has been cooperating effectively in the design and procurement of the necessary signs.



THREE LIGHT TRAFFIC SIGNAL INSTALLATIONS
 Open Circles - Awarded 1953-54
 Solid Circles - Completed Previously

Fig. 7

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GOLDEN GATE PARK, PANHANDLE, STANYAN, OAK AND FELL STREETS
Before Reconstruction, Channelization and One Way Operation



GOLDEN GATE PARK, PANHANDLE, STANYAN, OAK AND FELL STREETS
After Reconstruction, Channelization and One Way Operation

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FELL, POLK AND MARKET STREETS
Before Channelization and One Way Operation



FELL, POLK AND MARKET STREETS
After Channelization and One Way Operation

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TRAFFIC FACILITIES AND IMPROVEMENTS

	Completed 1953-54	Approx. Cost 1953-54	Number In Place 6-30-54
SIGNALIZED INTERSECTIONS			
Wiley type signals removed and not replaced	0		97
3-Light Installations added	90		418
Net Increase	90		515
Equipped with pedestrian signals	52		127
Actuated signals added	48		117
Cost - All work		\$562,000	
TRAFFIC SIGNS			
Parking Signs Installed	613		14,000 (est.)
Other Signs Installed	558		
Other Signs Replaced	140		
Total	1,311		
Stop Signs Added	238		
Stop Signs Replaced	21		
Total Cost		15,000	
In addition, California State Auto Assn. spent \$12,000 for labor			
STREET NAME SIGNS			
Old type replaced by new	50	2,500	7,121
New installations	204	1,020	
Signs repaired	1,265	17,980	
Total Cost		21,500	
PARKING METERS			
New installations	702	35,000	12,230
Maintenance Changes	950	5,764	
Relocations	380	1,921	
Total Cost		42,685	
TRAFFIC PAVEMENT PAINTING			
Standard Striping, Miles	365	44,280	
12-inch stripes, Miles	140	86,337	
Pavement Words	1,026	2,318	
Bus Zones	1,875	14,465	
Parking Meters	8,080	8,611	
Total Cost		156,011	
New School Intersections	63		789
CHANNELIZED INTERSECTIONS			
Concrete Islands	19		
Raised Pavement Bar Islands	1		
Total	20		
DIVIDED ROADWAYS			
Concrete Center Island, Miles	1.3		
Painted Center Island, Miles	0.1		

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SURVEYS AND MAPPING

The Division of Surveys and Mapping employed six field parties during the first half of the year and five during the second half. Six men were employed in the office.

NUMBER OF SURVEYS

A total of 223 separate surveys were undertaken as follows:

Public Improvement Surveys

Public and private contracts	47	
City Pay Contracts	164	211

Lot Surveys

For Recreation and Park Department	3	
For City Architect	9	12

Total number of surveys	223
-------------------------	-----

Survey fees received during the year amounted to \$6,725.00.

SURVEY MILEAGE

Survey lines run are segregated by type of work as follows:

Type of Survey	Miles
Lots	1.4
Sewers	4.7
Cross Sections	46.0
Surveys in slide areas	1.3
Subsidence levels	4.7
Monument lines	5.4
Topography	18.5
New Streets	3.1
Line and Grade for Curb and Paving	24.5
Track Removal	3.1
Reference Survey Cuts	2.3
Total length of surveys run	115.0

PRECISE LEVEL SURVEYS

The test of subsidence benches begun in the latter half of the previous fiscal year for the purpose of determining the rates of subsidence in the Hundred Vara, Potrero and Mission Districts was concluded this year.

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Precise level lines to set new bench marks or to replace those disturbed by track removal and street reconstruction were run where required throughout the City aggregating 35 miles in length. The number of precise bench marks established was 2,305.

OFFICE WORK

Eight maps of school sites, playgrounds, fire house sites and an addition to the de Young Museum in Golden Gate Park were prepared showing precise boundaries, locations of improvements and utilities, and contours at five foot intervals.

Computations, preliminary drawings and deed descriptions for the acquisition of property were made for numerous projects including Thirteenth Street, Farmers Market, Candlestick Sewer Tunnel, Shore Line Development State Park, Mercury Street, Murietta Drive, Winston Drive Extension, Lake Merced Boulevard, Masonic Avenue Extension, and Egbert Avenue.

Three tentative subdivision maps were examined and checked for correctness of street widths and grades. Two final subdivision maps submitted for filing in the Public Records were checked for correctness of lot line dimensions and exterior boundaries.

Twenty-seven requests from the City Attorney's office to determine the City's interest in property involved and to check the boundary description in actions to quiet title were reported on.

Eight appeals from decisions of the City Planning Commission were checked to determine whether the signatures represented at least twenty percent of the owners within a radius of 300 feet of the property involved so as to qualify for consideration by the Board of Supervisors.

STREET IMPROVEMENTS FINANCED BY PROPERTY OWNERS

All street construction financed in whole or in part by the fronting property owners for which permits were granted or for which public contracts were awarded during the fiscal year ending June 30, 1954 and also those which were authorized but not completed in the previous fiscal year are listed in detail in Appendix I, Tables B-1 and B-2.

PRIVATE CONTRACTS

Table B-1 lists the street improvement projects performed under private contracts negotiated directly between property owners and contractors, the City's only function being to grant the permits, furnish the plans, and inspect the construction work. It

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will be noted that 16 permits for private contracts were issued covering work costing about \$179,000. This represents a reduction of about 50% from the previous year due to the decline in subdivision work.

ASSESSMENT CONTRACTS

Table B-2 lists similar street projects which were done under public contract awarded by the City, the cost being assessed in whole or in part against the property owners benefited thereby. This procedure is in accordance with the Street Improvement Ordinance of 1934 which provides for preparation of plans and specifications, notification of property owners, public hearings, awarding of contract, supervision of construction, and final levy of assessment on the property. In many cases, City Aid is extended in order to reduce individual assessments to the legal limit which is defined as two and one-half times the lot valuation. The City also contributes funds according to established rules in order to prevent excessive assessments on residential corners, irregular lots and property having disproportionately long frontage. The number and value of assessment projects was about the same as last year.

Table III indicates the volume of work carried on during the year in connection with the street improvement procedures.

TABLE III
STREET WORK PROCEEDINGS UNDER
THE STREET IMPROVEMENT ORDINANCE OF 1934

Resolutions of Intention passed	20
Street Improvement Projects recommended to the Board of Supervisors	20
Notices of Street Improvement posted	162
Notices of Resolution of Intention mailed	218
Ordinances ordering performance of street improvements passed	21
Proposals for street improvements published	21
Awards of Contract for street improvements	15
Notices of Recordation posted	163
Notices of Recordation mailed	349
Private Contracts granted	16
Assessments issued (total amount \$180,264.20)	23
Bond payments received (total amount \$8,412.10)	79

STREET DEDICATIONS AND CHANGES

Numerous actions taken by the City during the year with reference to subdivisions, street grades, sidewalk widths and street closings were based on investigations and recommendations of the

Bureau of Engineering and in many cases involved preparation of specific descriptions by the Surveys and Mapping Division of the Bureau.

SUBDIVISION MAPS

The following tentative subdivision map was received and reported on:

Midtown Terrace Subdivision No. 3
Resubdivision of Assessor's Block 3026
Talbert Court

Two subdivision maps approved by the City Engineer and the Director of Public Works and filed in the Recorder's office were as follows:

Resubdivision of Assessor's Block 3026
Restani Terrace

STREET OPENINGS

Maps approved and recorded, providing for the opening, widening and extension of streets, were as follows:

Casitas Avenue	Lansdale Avenue to Ludlow Alley	Realignment
Broadway	Above the Tunnel	Widening
Winston Drive	Extension to Lake Merced Boulevard	Extension

STREETS VACATED

The following streets were vacated between the limits noted:

Shafter Avenue	Silver Avenue to Selby Street
Rankin Street	Shafter Avenue to Revere Street
Twenty-Third Street	22.5 ft. to 360 ft. W'y from Penn- sylvania Avenue
Twelfth Avenue	100 ft. S'y of Santiago to San Marcos Avenue
Funston Avenue	S'y Santiago Street to Rivera Street
Santiago Street	14th Avenue to San Miguel Ranch Line
Castenada Ave.	12th Avenue to 64 ft. E'y
San Marcos Ave.	Funston Avenue to 120 ft. E'y
Georgia Street	24th Street to 25th Street
Louisiana St.	24th Street to 25th Street
Case Street	575 ft. to 735 ft. SW'y from Weldon Street
Tehama Street	162 ft. 2 1/4 in. to 275 ft. SW'y from Second Street

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Hunters Point	Small triangular ptn. bet. Hudson
Boulevard	and Innes Avenues
Shoup Avenue	Egbert Avenue to Armstrong Avenue
Carroll Avenue	Newhall Avenue to Shoup Avenue

STREET GRADES ESTABLISHED

New grades were established on the following streets:

Corwin Street	Douglass Street to its W'ly termination
Stanton Street	Grandview Avenue to its N'ly termination

SIDEWALK WIDTHS CHANGED

Merchant Street	Embarcadero to Drumm Street
Pine Street	Larkin Street to Franklin Street

STREET MILEAGES

Streets and highways in the City as of June 30, 1954 were classified as follows:

Class	Miles
State Highways	30.74
Major Streets	182.28
Other Improved Streets	602.03
Total Improved	815.05
Unimproved Streets	101.56
Total Dedicated	916.61

STREET AND SIDEWALK INSPECTION

A staff of six inspectors was employed during the year on supervision of street excavations, inspection of sidewalks, and reports and investigations in connection therewith.

SIDEWALK INSPECTIONS

On the average, two inspectors were engaged continuously on sidewalk inspections. They worked in the following districts:

Central 50 Vara
Outer Richmond
Civic Center

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Mission
Glen Park
Bay View
Portola
Ocean View

In addition, many special sidewalk and driveway inspections were made in connection with the various track removal and pavement reconstruction contracts. The locations inspected are described elsewhere under the construction projects completed and are generally scattered over the entire city. Combining sidewalk inspection with the pavement improvement results in securing a completely renovated street from property line to property line. The combined coverage of all sidewalk inspections totalled 26,613 lot frontages. During the last half of the year new sidewalks installed aggregated 33,117 square feet

OTHER INSPECTIONS

Various street maintenance inspections and permit investigations were made by the remainder of the inspectors, the major type being utility excavations, tank installations, driveways, construction use of street space, pavement defects, house movings, blasting, and complaint and claims investigations. Activities are illustrated by the following Table IV.

TABLE IV
Inspections, Notices, Permits, and Investigations

Curb lowering permits and inspections	836
Notices to construct or repair sidewalk	3,758
Notices to remove obstructions, oil, etc.	609
Notices to replace side sewer covers	686
Street Space permits and inspections	2,484
Sidewalk tank excavation permits and inspections	227
House moving permits and inspections	17
Defects in pavements reported, written	2,130
Damaged signs reported	365
Excavation permits approved (Fees amounted to \$18,622.50)	13,387
Excavation repaving inspected	3,683
Notices of Improvements Posted	442
State Encroachment Permits obtained	74
Claims investigations and inspections	530
Special investigations	2,571
Personal and telephone inquiries answered	13,955
Citations requested	13
Building Permit Driveway Plans, checked	419

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DAMAGE CLAIMS

The Bureau investigated 227 damage claims based on street and sidewalk accidents, usually falls, which had been filed against the Department of Public Works during the fiscal year 1953-1954. A review of the claims finds:

- 52 due to Contractor's operations,
- 9 due to construction by utilities,
- 51 due to street conditions,
- 77 occurred on sidewalks,
- 11 occurred in bus zones, and
- 27 involving property damage of various types to automobiles, buildings, etc.

The six classes of claims mentioned above were incurred as follows:

- 132 by female pedestrians,
- 25 by male pedestrians,
- 20 by male auto drivers,
- 4 by female auto drivers,
- 46 cases of property damage without any personal injury.

Under present law, the Department of Public Works may be held liable for damages if negligence in making necessary street repairs can be shown. In each of the above cases a full report was made for the City Attorney, accompanied by photographs when appropriate.

According to a report prepared by the Controller, the following is a summary of the expenditures for judgments and claims for the fiscal year ended June 30, 1954, involving sidewalk and street areas:

	No. of Claims	Amount of Claims	Amount Paid
Defective Sidewalk	41	\$536,133.00	\$ 67,122.56
Defective Street Areas	24	274,843.99	24,469.60
Totals	65	\$810,976.99	\$ 91,592.16

LABORATORY AND TESTING

The testing laboratory was operated as a unit of the Division of Construction to check the quality of materials used on construction projects and to control the asphalt and concrete mixes used in pavements and structures. In addition many routine tests

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were made for the Purchaser of Supplies, the Bureau of Architecture, the Public Utilities Commission, the Fire Department and the Recreation and Park Department.

CONCRETE

The use of Calcium Chloride, to accelerate the setting of concrete, was continued in all Class E concrete pavement and parking strips to speed up opening of the lanes for the movement of traffic. In some cases traffic moved in the late afternoon over slabs which had been poured in the early morning, without causing visible damage.

On Clayton Street near 17th Street fine shrinkage checks developed in the surface of the pavement slab, apparently caused by a combination of strong dry wind with warm weather and slightly over-wet concrete. The checking was not serious enough to delay the asphalt surfacing which up to the present time has not shown any signs of failure.

SAND

The Antioch sand vendor has recently moved his equipment to a new sand pit and is now supplying a more satisfactory, coarser-graded sand than was furnished previously. A manufactured 'Sand Equivalent' type of asphalt sand which yields a very satisfactory, open-textured stable asphalt surface is also being used extensively. This sand has been used with varying proportions of crushed rock from 3/8 inch maximum to 1-1/4 inch maximum with very good results. Such mixes were supplied on several resurfacing jobs which required feather edging and also in coarse 'Virginia Type' mixes, with 65-75% rock, as used on Noriëga Street from 34th to 48th Avenues. These surfaces, where properly placed, show no signs of raveling or displacement. When a tighter texture is desired this sand blends well with 20-30% Antioch sand.

ASPHALT

Van Ness Avenue was resurfaced in the latter part of 1952 and the early part of 1953 with an asphalt mix consisting of 45% broken stone with a 5.5-6.0% asphalt, the balance being made up with 100% Antioch Sand. This pavement has developed a considerable amount of lateral displacement and shows a definite tendency to constant mobility as evidenced by the distortion of the pedestrian lane stripes at a number of street intersections caused by the traction of traffic when stopping and starting. The defect of this asphalt surface was not entirely due to the use of Antioch sand, but also to a combination of laying heavy courses of more than 2 inches in thickness without proper compaction, and opening

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to heavy traffic too soon after rolling and before proper cooling and setting. Most of the displacement took place soon after opening to traffic.

On Noriega Street a condition was encountered which caused trouble. When the cracks in the old pavement were sealed with sand and liquid asphalt prior to re-surfacing, an excessive amount of asphalt residue was left on the surface. This asphalt softened when a hot load of re-surfacing mix was placed over it and acted as a lubricant. The front wheel of the roller pushed the overlying material into a ridge at the line of the old crack and the back wheel (powered wheel) pulled the material against this ridge from the opposite side causing a very bad bump. When it was attempted to press these ridges down, the material would slide outward from the center and a crack would develop. This condition was remedied by keeping the temperature of the mixes at the lower limits. The cracks which developed were cut out and plugged with the same mix to keep a uniform surface.

SUMMARY OF TESTS PERFORMED

A summary of the number of tests performed in the laboratory during the year for various agencies, together with corresponding figures for the preceding year, are shown in the following table.

TABLE V

Chemical and Physical Tests	1952-53		1953-54	
Public Utilities Commission	35		25	
Department of Public Works	105		100	
Purchaser of Supplies	150		90	
S. F. Fire Department	30		25	
Recreation and Park Department	20		30	
Bureau of Architecture	320		300	
Bureau of Engineering	159	810	120	690
Paint Tests				
Recreation and Park Department	4		6	
Purchaser of Supplies	40		30	
Bureau of Architecture	30		10	
Public Utilities Commission	10		15	
Bureau of Engineering	10	94	5	66

Bureau of Engineering

Asphalt and Coal Tar Tests

Corporation Trenches	20		15	
Public Utilities Commission	24		35	
Recreation and Park Department	3.		5	
Department of Public Works	100		150	
Bureau of Engineering	180	327	200	405

Concrete Tests

Bureau of Building Inspection	2		4	
Recreation and Park Department	26		42	
Bureau of Architecture	920		525	
Public Utilities Commission	62		38	
Bureau of Engineering	570	1580	265	874

TOTALS

2811

2035

SEWAGE AND WASTE TREATMENT

GENERAL

The Sewage and Waste Treatment Division operates the North Point, Richmond-Sunset and Southeast Sewage Treatment plants; investigates disposal of industrial wastes for conformance with existing ordinances; and advises on operation of sewage treatment facilities under the jurisdiction of other City departments. The three plants operated continuously during the fiscal year, treating sewage from all parts of the city except limited areas along the Bay shore. The unserved areas will be connected to the plants upon completion of the additional collecting sewers and pumping stations now under construction or planned for the future.

Four drainage areas, aggregating 1,420 acres and contributing an average of 3.25 million gallons per day, were connected to the Southeast influent sewer during the fiscal year. The following table gives pertinent data on these drainage areas:

TABLE VI

Intercepting Sewer	Date Completed	Outfall Intercepted	Contributing Area, Acres	Average Flow, gpd
Mendell	11-20-53	Mendell	10	100,000
Hunters Point Tunnel	1-27-54	Palou Ave. Evans Ave.	850 280	1,600,000 700,000
Islais Creek North Shore	2-2-54	Third St.	160	500,000
Mariposa Pumping Station	3 -9-54	Mariposa St.	120	350,000
			1,420	3,250,000

Bureau of Engineering

PERSONNEL

There was no change in Division personnel during the year. The following table shows the distribution of plant personnel as of June 30, 1954, exclusive of the Senior Engineer in charge of the Division and the Industrial Waste Engineer.

TABLE VII

Classification	North Point	Richmond-Sunset	South-east
Superintendent	1	1	1
Chemist	1	1	1
Water Chemist	2	1	3
Clerk-Stenographer	1	1	1
Chief Operating Engineer	1	1	1
Operating Engineer	6	6	7
Junior Operating Engineer	15	5	27
Janitor	1	-	1
Laborer	4	3	5
Truck Driver	1	1	-
	33	20	47

Major bacteriological work for the Division, requiring one Water Chemist, is centralized at the North Point laboratory. A limited amount of bacteriological work is also done at the Richmond-Sunset laboratory. Engineering design for improvements is performed by other divisions of the Bureau as required. Major repairs and maintenance requiring the services of specialized crafts are done by other City forces. The Recreation and Park Department maintains landscaping at all plants.

SEWAGE TREATMENT METHODS

Each plant provides primary treatment for removal of oil, grease, floating material, grit and settleable solids. The effluent is chlorinated during designated seasons for bacterial disinfection before being discharged into the ocean or bay. Sand and screenings from the North Point and Southeast plants are hauled by truck to the garbage fill south of the county line. At the Richmond-Sunset plant screenings are incinerated and sand is hauled to a city dump.

The Richmond Sunset plant provides two-stage digestion, elutriation and vacuum filtration of the digested sludge. During the

past year all filter cake was hauled to city parks for use as a soil conditioner. In the future this cake will be hauled to the Southeast plant for final drying. Raw sludge collected at the North Point plant is pumped to the Southeast plant through a 10-inch diameter concrete-lined force main approximately six miles long. The sludge treatment facilities at the Southeast plant provide for thickening of raw sludge, two-stage digestion, elutriation, vacuum filtration, flash drying and pelletizing of dried sludge. Part of the dried sludge was delivered to the Recreation and Park Department for use in city parks and to the Water Department for use in the walnut groves at Sunol. A two-year contract for sale of the balance of the material was in effect from July 7, 1953 at a price of \$5.00 per ton in unpelletized form.

TREATMENT PLANT OPERATION

The following table summarizes data on flows, materials removed, chemicals added and products handled, and power and gas purchased for the three plants.



NORTH POINT PLANT
Aerial View

Bureau of Engineering

TABLE VIII
SUMMARY OF TREATMENT PLANT OPERATIONS
Fiscal Year 1953-1954

	North Point	Richmond-Sunset	Southeast
Sewage Flow, million gallons			
Total	13019	4441	5132
Max day, wet weather	75.3	18.4(a)	29.6(a)
Max day, dry weather	37.9	16.7	21.9
Avg day	36.4	13.2	14.4
Max rate, wet weather	156	27(a)	33(a)
Max rate, dry weather	58	22.5	30
Screenings, cu ft			
Total	24348	8099	15670
Max day	208	36	193
Per million gallons	1.9	1.8	3.1
Grit, cu ft			
Total	44343	47709	22513
Max day	540	378	600
Per million gallons	3.4	10.7	4.4
Chlorination, lb(b)			
Pre	491470	132790	172610
Post	664020	275160	242800
Process water (rff)			28880
Total	1155490	407950	444290
Per million gallons	110	100	115
(Dry Weather)			
Sludge Solids, M lb (dry)			
From sedimentation(c)	26482		22248(d)
To digesters(e)		6948	31541
Filter cake		1896(f)	8467
Dried Sludge			6210
Ferric Chloride			
Total, lb		48400	364410
% used based on filter cake solids		2.55	4.30
Gas Production, M cu ft			
Total		52400(g)	20094
Avg day		144(g)	550
Power and Gas Purchased			
Power, total M kwh	4677.6	1714.8	2112.0
Power, avg/mo, M kwh	389.8	142.9	170.0
Natural gas, total C cu ft	84258	25372	68120
Natural gas, avg/mo, C cu ft	7022	2114	5677

Bureau of Engineering

TABLE VIII (Cont'd.)
SUMMARY OF TREATMENT PLANT OPERATION
Fiscal Year 1953-1954

	North Point	Richmond-Sunset	Southeast
Hauling			
Trips, grit and screenings	588		363
Trips, grit and filter cake		998	

NOTES

- (a) Flow restricted during storms to avoid overloading grit handling facilities.
- (b) North Point: pre-chlorination continuous; post-chlorination nine months March through November. Richmond-Sunset: pre-chlorination continuous; post-chlorination continuous except during storms. Southeast: pre-chlorination continuous; post-chlorination continuous seven months April through October.
- (c) Pumped to Southeast plant raw sludge thickening tanks.
- (d) Includes recirculating load from raw sludge thickening and digested sludge elutriation overflows.
- (e) From raw sludge thickening.
- (f) Some digested sludge discharged to outfall while cleaning secondary digester.
- (g) Estimated from volatile solids in raw sludge to digesters - meters inoperable.

INDUSTRIAL WASTES

The program of sampling and analysis of industrial wastes continued during the year. Field investigations ordinarily were limited to checking specific complaints and ordinance violations. Samples collected were analyzed by the treatment plant laboratories. Affected industries generally cooperated readily in improving plant facilities and in making necessary changes in operation.

Effective July 3, 1953, Ordinance 7425, regulating the discharge of waters and wastes into the sewerage system, was amended to permit the use of mechanical garbage grinders in establishments where food or drink is consumed on the premises or is picked up or

Bureau of Engineering

delivered for immediate consumption. All makes of grinders are tested at the Richmond-Sunset plant for compliance with the ordinance.

RESULTS OF OPERATION

Bay and ocean waters in the vicinity of the treatment plant outfalls and at nearby beaches remained in excellent condition during the fiscal year. Waters are safe for bathing along the ocean beach and nearby north shore beaches, and at Aquatic Park at all times except when storm overflow occurs during the winter season. At Islais Creek odors of sewage origin have disappeared, bacteriological contamination is greatly reduced, dissolved oxygen has greatly increased, and marine life is in greater evidence.

COST OF OPERATIONS

Total expenditure for the fiscal year was \$811,461. The cost was distributed as follows:

Personal Services	\$517,098
Heat, Light and Power	107,745
Contractual Services	55,868
Materials and Supplies	124,325
Equipment	6,425

Based on a flow of 22,592 million gallons, cost of operation per million gallon treated was \$35.92.

The following improvement contracts were completed during the year:

	Awarded	Contract Amount	Completed	Fund
Southeast - ferric chloride pumps & piping	11/4/53	\$5,505.00	5/27/54	1948 Sewage Tr. Bonds
North Point - vortex control baffles in post- chlorination tank	2/10/54	2,937.00	4/13/54	1948 Sewage Tr. Bonds
Southeast - re- construction of dryer arch	Emer. Pub. Wks. Order	2,902.71	3/22/54	1948 Sewage Tr. Bonds

Bureau of Engineering

Complete details of operation are given in a separate report which will be made available to interested persons at a later date.

GARBAGE DISPOSAL

Since 1932, all garbage and refuse collected in San Francisco, except limited amounts of hotel and restaurant wastes sold to hog raisers, have been disposed of by the sanitary fill method. Two licensed scavenger companies make the collections and haul to the dump and a jointly financed company operates the sanitary fill. The City's only functions are to control collection rates and enforce public health regulations.

COLLECTION AND TRANSPORTATION

All garbage and refuse is picked up at back doors in the residential districts once or twice a week by the private scavenger companies. In the downtown districts, where large amounts of paper and garbage accumulate, general collections are made three times a week. At the larger hotels, collections are made daily. No segregation is required on the part of the householder, but some salvaging is done by the collectors enroute and at a sorting shed near the disposal site. Paper, bottles, rags, metals, etc., are removed before weighing the amount of garbage hauled to the dump.

The two scavenging companies used 146 trucks and averaged 272 trips per day. Each truck has a capacity of about 20 cubic yards but after the removal of salvaged materials, the load carried to the fill averages about 18 cubic yards. Total daily collections averaged 878 tons in 1953. The scavenger companies operate six days a week or about 312 days a year. Saturday collections are slightly above 60% of normal week day collections.

Twenty-six flat bed trucks were used to haul waste paper, the total amount collected being 24,024 tons, an increase of 24% over the amount collected during the preceding year. Of the total amount collected, 16,589 tons were salvaged which was about 15% less than the 1952 amount. The remaining 7,435 tons of paper were hauled to the fill and burned in a remote area. It has been found inadvisable to mix large volumes of paper with ordinary garbage and refuse because it creates a fire hazard.

SANITARY FILL

The disposal site is located on a tide flat on the shore of San Francisco Bay just south of the City's southerly boundary. The property is owned by the Southern Pacific Company and adjoins

Bureau of Engineering

the company's Bayshore switching yards for a distance of about 6400 feet. Quarries for cover material are located conveniently near the north and south ends of the fill site.

The present fill runs for 4,800 feet along the shore line of the Bay and varies in width from 1,200 feet to 1,500 feet. The surface is fairly smooth and free from large depressions. The elevation varies from 20 feet to 26 feet above mean sea level. Filling during 1953 was principally along the easterly edge of the fill and in the cove between the main fill and the new Bay Shore Freeway fill which is being extended from Candlestick Point toward Sierra Point. About 30 acres of tide flat between the two fills was covered with a single lift of garbage and refuse during the year. The area of the main body of the fill was increased slightly to about 150 acres.

The construction of the fill for the Bay Shore Freeway has caused a large displacement of mud into the tide flat area which has been reserved by the Sanitary Fill Company for garbage disposal. It is estimated that the mud push-up is equivalent to approximately the volume of five years of garbage disposed of by the normal method.

FILL AND COVER OPERATIONS

The Sanitary Fill Company, which is controlled by the two scavenger companies, handles the fill and cover operation at the fill site through Easley and Brassy, Contractors. The collection trucks dump the garbage at the margin of the fill and a large bulldozer compacts and levels it in layers 4 to 6 feet thick. Earth and rock is brought in from the quarry and spread over the garbage in 12-inch to 18-inch layers at the end of the day. Additional layers are placed and covered after several weeks or months of settlement. The contractor uses three to four 7-yard dump trucks and a 1½-yard power shovel in the quarries and two D-8 Caterpillar bulldozers with 14-foot blades on the dump.

Of the 300 acres leased by the Sanitary Fill Company from the Southern Pacific Company, about 140 acres are still available for future fill. The earth and rock available for cover material in the quarries at either end of the fill was reduced by the end of the year 1953 to the amount needed for approximately one year's operations. During the year, real progress was achieved toward the release of a portion of Sanitary Fill Company's property on the north slope of Candlestick Cove which has been used for the last 10 years as a site for a public housing project. After negotiations lasting over the last three or four years, the company finally obtained permission to move into this area on July 16, 1954.

Bureau of Engineering

STATISTICS

The quantities and costs, which appear in the following table on a calendar year basis, are based on information furnished by Easley and Brassy. They do not include administrative and overhead expenses of the Sanitary Fill Company, which employs the contractor. The Sanitary Fill Company is permitted by franchise to collect 90 cents per ton from the scavenger companies.

TABLE IX
SANITARY FILL AND COVER REFUSE DISPOSAL STATISTICS
Calendar Years 1952 & 1953

	1952	1953
Total Income - Tonnage at 90¢	\$245,676.11	\$246,458.93
Expenses		
Operations	196,564.14	202,567.29
Roads and Maintenance	6,306.03	7,514.87
Administration and Inspection	50,891.65	51,120.43
Total Expense	253,761.82	261,202.59
Garbage and Refuse Handled		
City of San Francisco, tons	271,258.16	272,249.85
Other Sources, tons	1,715.29	1,593.40
Total Tons	272,973.45	273,843.25
Quantity per day, tons (312 days)	875	878
Cost of disposal per ton	\$ 0.930	\$ 0.930
Cover Material		
Quantity Used, cu. yds.	165,240	188,775
Cost, total	\$104,327.29	\$109,895.00
Cost, per cu. yd.	\$ 0.632	\$ 0.582
Cover per ton of Garbage and Refuse, cu. yds.	0.606	0.690
Truckloads of Garbage and Refuse	83,669	94,760
Average Weight per Load, tons	3.26	3.23
Estimated Average Weight of Garbage per cubic yard, lbs.	362	359

SERVICES PERFORMED
FOR OTHER BUREAUS AND DEPARTMENTS

The Bureau of Engineering supplied the technical services summarized below to the other bureaus of the Department of Public Works and the other departments of the City named below.

BUREAU OF BUILDING REPAIR

Estimates for Budget Purposes

City Hall Main Feeder Switchboard

Maintenance Yard Contract No. 3

Supervision of additional improvements at Maintenance Yard

Supervision of retubing of existing boiler No. 1 at Hall of Justice

BUREAU OF SEWER REPAIR

Estimates for Budget Purposes

Marina Pumping Station Outfall Gate Installation

Sewer Trench Bridge - Investigation as to strength

Laboratory analysis of seepage water and advisory service on gas survey

BUREAU OF STREET REPAIR

New Municipal Asphalt Plant - Furnishing supporting engineering data for necessary appropriation of funds for contract

BUREAU OF ARCHITECTURE

Surveys

Six fire house sites - topography and boundaries

Silver Avenue Elementary School - boundaries

Lake Merced Elementary School - topography

San Francisco City College - construction points

San Francisco Hospital Improvements - Plans and Estimates for:

Kitchens in Ward Buildings 10, 20, 30 and 40 modernization - plumbing, heating and electrical work

Main Kitchen alterations - plumbing, new exhaust ventilation system and electrical work

Physiotherapy Department alterations - plumbing, heating, ventilation and electrical work

Main hot water supply lines - Replacement

Fourth Floor Nursery - New air conditioning system

Ward Buildings 10, 20, 30 and 40 - Installation of automatic sprinkler fire protection system

Fire Roads and Sprinkler system including electrical work for alarm system

New Elevators in Ward Buildings 10, 30 and 40 - Structural work

Bureau of Engineering

School Improvements - Plans and Estimates for:

Polytechnic High School - Converting foundry to Art Metal and Ceramics Room and miscellaneous alterations - plumbing, heating, electrical and ventilation work

Portola Junior High School - Alterations, kitchen and cafeteria - plumbing, ventilation and electrical work

Balboa High School - Alterations of kitchen and cafeteria - plumbing and electrical work

Mission High School - Cafeteria alterations - electrical work

Bret Harte School - Stabilization of slopes south of school under emergency contract

Administration Building - Conversion of locker rooms - electrical work

New Audio Visual Aids room in Civic Auditorium - electrical work

Fire House Improvements:

Fire House No. 38 Reconstruction - plumbing, heating, ventilation and electrical work and designing addition

Fire House No. 39 Reconstruction - plumbing, heating, ventilation and electrical work

Fire House No. 15 - Preliminary structural design for new basement

Fire House No. 33 Reconstruction - structural work

Fire House No. 36 Reconstruction - structural work

Clayton Street Fire House (proposed) - Investigation of foundation conditions

Hall of Justice - Ventilation work in courtroom and offices

City Hall - Ventilation and electrical work in new Traffic Warrant Bureau office

Laguna Honda Home

Survey and estimates for bond issue purposes - structural, mechanical and electrical work

Voting Machine Warehouse - Contract plans, specifications and estimates for structural, mechanical and electrical work - approximately 75% completed

FIRE DEPARTMENT

Estimates for Budget Purposes

Auxiliary Water Supply System Extension - Shotwell Street from 20th Street North to new Drill Yard

Reinforced concrete cisterns at four locations

Electrolysis Survey of High Pressure Water Mains

Supervision of contract for repairing, waterproofing and painting Jones Street Tank

Bureau of Engineering

SEALER OF WEIGHTS AND MEASURES

Estimates for Budget Purposes

Meter testing and tank calibration stations
Farmers Market paving

YOUTH GUIDANCE CENTER

Estimates for Budget Purposes

Incinerator for the disposal of trash
Ventilation of classrooms in six cottages
Supervision of contract for reconstruction of existing slopes and
drainage facilities

CORONER

Estimates for Budget Purposes

Rehabilitation of Coroner's office and morgue

REAL ESTATE DEPARTMENT

Commerce High School Parking Lot - Drainage investigation

DEPARTMENT OF ELECTRICITY

Estimates for Budget Purposes

Proposed new Maintenance Yard

SHERIFF'S DEPARTMENT

Inspection and tests at regular intervals for control of operation of sewage treatment plant at County Jail No. 2 in San Mateo County

RECREATION AND PARK DEPARTMENT

Advisory service on operation of sewage treatment plant in Golden Gate Park

Investigation and report on breakwater at Aquatic Park

Supervision of additional improvements and timber stairway at Phelan Beach Recreation Area

Topographic and boundary surveys of Pine Lake Park, Garfield Square Playground and addition to the DeYoung Museum in Golden Gate Park

DEPARTMENT OF PUBLIC HEALTH

Supervision of construction of Garbage Cooker Building at Hassler Health Home

Advisory service on operation of sewage treatment plant at Hassler Health Farm in San Mateo County

Bureau of Engineering

PARKING AUTHORITY

Off-Street Parking Survey for Nob Hill area - Garage for 300 stalls

Report on 'Lurie Plan' for downtown garages

Report on 'Downtown Parking Program' - Long range program for series of garages - combined capacity 5,690 stalls, cost \$17,754,000

Supervision of construction of the Mission-Bartlett Parking Plaza

CITY ATTORNEY

Report on status of all damage claims and suits pertaining to streets and property of Department of Public Works

JOINT HIGHWAY DISTRICT NO. 10

Plans for channelization at Hickey Boulevard intersection

Checking and recommending approval of maps of all subdivisions adjoining the right-of-way for proper slope easements and access roads entering the boulevard

LABORATORY TESTS AND EXAMINATIONS

Made for Bureaus and Departments as follows:

Bureau of Architecture	835
Other Bureaus of the Department	254
Recreation and Park Department	83
Public Utilities Commission	113
Purchaser of Supplies	120
Fire Department	25

Total	1,430
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ADMINISTRATION OF THE BUREAU

ORGANIZATION

The present plan of organization is shown on the chart at the beginning of the report of the bureau. It will be noted that there are two staff divisions and six line divisions under the direction of the City Engineer who heads the Bureau and reports to the Director of the department. The Assistant City Engineer assists in general supervision and also acts as head of the Division of Streets and Highways.

PERSONNEL

The Bureau of Engineering had a staff of 303 employees on June 30, 1954. Slightly over half of these were carried on payrolls

Bureau of Engineering

charged against General Tax budgets for general engineering and sewage treatment plant operation. The remaining 141 employees were charged against project funds for various improvements. The number of persons now employed is thirty less than were employed at the end of the preceding year.

Personnel at Beginning and End of Fiscal Year

Division	July 1 1953	June 30 1954	Decrease
Design and Administrative	126	124	2
Construction (Field)	46	29	17
Surveys and Mapping (Field and Office)	34	27	7
Clerical Staff	25	21	4
Sewage Treatment	102	102	-
Totals	333	303	30

PAYROLL

The following tabulation lists the sources of funds for payment of salaries and shows the total annual payroll and the number of employees charged to each fund on June 30, 1954.

Source of Payroll Funds

Fund	Employees End of Year	Payroll 1953-54
General Fund (Budget Payroll)		
General Engineering	60	\$ 354,804.66
Treatment Plant Operation	102	517,098.03
Total Budget Payroll	162	871,902.69
Project Funds-Gas Tax, Bonds, Etc. (Interdepartmental Payroll)	141	728,834.48
TOTALS	303	\$1,600,737.17

RETIREMENTS AND DEATHS

Rodney E. Surryhne	Retired	11-1-53	Sr. Draftsman	30 years
Harry L. Reinfeld	Retired	2-1-54	Engineer	43 years
Patrick A. Devine	Retired	3-31-54	Draftsman	10 years
Peter S. Olenich	Retired	1-30-54	Draftsman	10 years
James B. West	Died	10-25-53	Jr. Engineer	23 years
Geo. J. Partridge	Died	11-12-53	Jr. Engineer	20 years

BUREAU OF BUILDING INSPECTION
Lester C. Bush, Superintendent

FUNCTIONS

For the purpose of ensuring compliance with City ordinances, the Bureau of Building Inspection reviews plans and inspects construction and installations involving structural, electrical and mechanical work throughout the City. It also studies and reports on legislation affecting buildings and structures and proposes new legislation as required.

BUILDINGS

The Bureau consults with architects, engineers, contractors and home owners in the preliminary stages of the preparation of their plans whether for new buildings or for alterations to existing buildings. It studies and reports on legislation affecting building matters and proposes new legislation as required.

The Bureau examines and reports on all applications for permits submitted to the Department of Public Works for new buildings, alterations to existing buildings, billboards and signs (electric and non-electric); inspects all this work as it progresses; makes a final inspection of new buildings or where a change of occupancy classification occurs, and issues Certificates of Final Completion when the work is finished.

Four 'called inspections' on buildings under construction are made at the following times:

- a. Foundations or other concrete forms must be inspected and approved before concrete is poured.
- b. Inspection before interior lathing. This is to see that all bracing, framing and firestops are installed.
- c. Inspection before exterior or structural plaster is in place.
- d. Final inspection prior to occupancy.

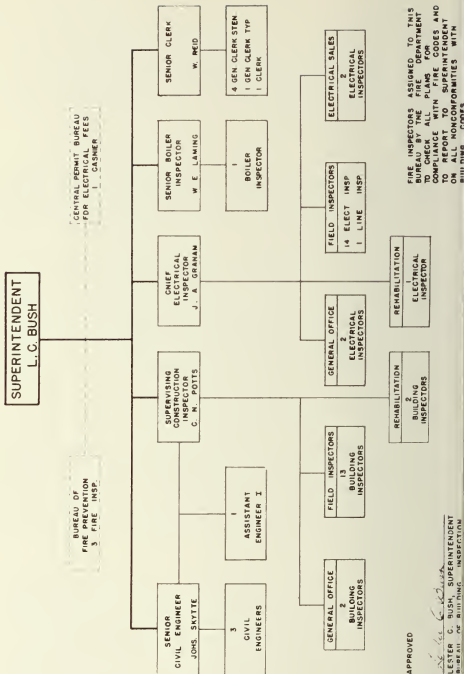
ELECTRICAL WORK

The Bureau regulates and supervises the installation of interior electric wiring of commercial, industrial and residential buildings and insures by frequent and adequate inspection that the standards provided for in City Ordinances, State and National Codes are maintained. Closely tied in with the inspection of interior wiring of buildings are other activities of the Bureau made necessary by the provisions of electrical ordinances affecting other City departments, and which entail cooperation with the Fire Prevention Bureau, Police Department, Health Department, and with the Division of Industrial Safety of the State of California. Some of these activities are summarized in the following paragraphs.

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS
ORGANIZATION CHART
BUREAU OF BUILDING INSPECTION

JULY 1, 1934

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Bureau of Building Inspection

Reports of fire presumably caused by defective electrical installations and all places reported to be of potential electrical hazard are also checked by the electrical inspectors.

Coin operated amusement devices with electrical controls are licensed by the Police Department and, before issuance of permit, are required to meet the approval of the electrical inspector.

Night clubs and places of public assembly are licensed through the Health Department and, before a permit to operate is granted, the requirements of this Bureau in regard to adequate lighting and emergency exits must be complied with.

A copy of all complaints and violations of the Electrical Safety Orders of the State of California issued to property owners is filed with this Bureau, is checked and verified by the electrical inspectors, and is held in the files until final approval is given.

State of California laws require that the electrical installation of wiring circuits, fixtures, signs, motors and electrical appliances be made by contractors licensed by the State, and San Francisco ordinances require that such licensed contractors be registered with the Bureau. Industrial plants which have their own plant electricians must also register with the Bureau.

All spray painting establishments in the City of San Francisco are licensed through the Fire Prevention Bureau, and before licenses are issued the electrical work connected therewith must be approved by this Bureau.

BOILERS AND AIR TANKS

Steam boilers and air pressure tanks are inspected to ensure compliance with all existing laws.

PERSONNEL

The personnel of this Bureau as of June 1954 consisted of 58 persons in the various classifications shown on the accompanying organization chart.

ORGANIZATION

The organization of the Bureau is shown on the accompanying chart. Duties of the various members of the staff are described in the following paragraphs.

APPROVED
SPECIAL AGENT IN CHARGE
BUREAU OF BUILDING INSPECTION
CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS
440 CALIFORNIA STREET
SAN FRANCISCO 4, CALIF.

ELECTRICAL
INSPECTION

BUILDING
INSPECTION

APPROVED
SPECIAL AGENT IN CHARGE
BUREAU OF BUILDING INSPECTION
CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS
440 CALIFORNIA STREET
SAN FRANCISCO 4, CALIF.

Bureau of Building Inspection

Superintendent - In addition to supervising the office, he takes an active part in the deliberations of various departments of the City government as well as other organizations with reference to matters of building construction, the building code, and building safety.

Supervising Construction Inspector - Acts as assistant to the Superintendent in the field; assigns and supervises the work of building inspectors; prepares records and reports; and checks construction progress.

Building Inspectors - One building inspector assists the Supervising Construction Inspector. He assists the public at the counter and provides them with the information they seek concerning various building regulations.

One building inspector represents the Director, Department of Public Works, on all cases coming before the Board of Permit Appeals with the exception of new construction. He inspects and reports on all night clubs, dance halls, and condemnations, when requested by the Police Department or the Department of Public Health.

Thirteen building inspectors are assigned to specific districts into which the city is divided and are charged with the responsibility for inspection work in their respective districts. This includes new construction of all types, alterations, billboards and signs. They report on all applications for construction in their districts prior to examination by the divisions of the Bureau; prepare and post Certificates of Final Completion; check and follow up complaints; interview property owners; and appear before courts in matters of condemnation and prosecution.

Boiler Inspectors - Make all installation inspections where any pressure vessel is installed. Inspect all boilers and air pressure vessels regularly when they are not insured and inspect and recommend repairs to defective equipment.

As deputy state inspectors, they must check all requests made by the Division of Industrial Safety and report any action taken by the City. They investigate all accidents where pressure vessels are involved and report the probable cause to the State and to the National Board of Boiler and Pressure Vessel Inspectors.

One inspector is a member of the A.S.M.E. Boiler Code Committee and passes on all new A.S.M.E. code changes and submits his report each month to the New York office of the A.S.M.E.

Complaints about pressure vessels are investigated and the necessary action taken to eliminate any defects or violations if found.

Bureau of Building Inspection

Senior Engineer (Civil) - Acts as Chief Structural Engineer and as principal assistant to the Superintendent; reviews engineering data submitted for approval of new materials and assemblies and makes recommendations to the Superintendent regarding such approvals; and supervises the work of the other engineers in the Bureau.

Structural Engineers (Civil) - Check and report on all plans pertaining to structural engineering; make field inspections; follow up matters concerning structural safety brought to their attention by the Supervising Construction Inspector or the district building inspectors; and assist other departments or bureaus in structural matters.

One Engineer, Civil, examines all plans and details for new construction and estimates the cost thereof. He also represents the Director, Department of Public Works, on all cases coming before the Board of Permit Appeals which concern new construction.

Senior Clerk - In charge of all clerks in the Bureau.

Chief Electrical Inspector - Under general direction assigns, supervises and reviews the work of electrical inspectors; approves or disapproves plans and specifications for electrical installations; supervises the maintenance of inspection records; and makes required reports.

Two electrical inspectors are detailed to the enforcement of the Electrical Sales Ordinance. This ordinance governs the sale, display, or giving away as a premium, all electrical material, devices and appliances designed for attachment to, or installation in or on any electrical circuit or system for light, heat or power. This entails visiting all retail stores, premium stores, factory agents, jobbers, manufacturers, and wholesalers to inspect all materials, devices, and appliances, and to determine whether they are approved by this department before they can be sold, displayed, or installed in San Francisco. In many cases this means granting a provisional approval on articles that have been submitted to Underwriters' Laboratories, Inc., for testing but testing not having been completed, allows a manufacturer to install or sell these appliances or materials with the proviso that any corrections required be made in the field. There are 1854 retail stores registered under this ordinance at present which are visited regularly for the purpose of inspecting the merchandise. As more merchants are going into business all the time and many ownerships are being changed, it is necessary to visit these stores to check their registration and inspect their merchandise.

The Line Inspector - inspects all installations, alterations, and maintenance of overhead lines owned and operated by public and private utilities used for the purpose of distributing electric power, light, communication and signal transmission, to see

Bureau of Building Inspection

that they conform to the Rules for Overhead Line Construction (G.O. 95), Public Utilities Commission, State of California, and the San Francisco Electrical Code. The line inspector also checks plans and specifications, and inspects all overhead lines pertaining to trolley coach installations. He inspects temporary electrical street decorations when supported by trolley span wires, or messengers and inspects installations of radio and television antennas. He checks all underground districts to see that they are kept clear of all overhead wires and cables and checks the erection of scaffolds that may be in proximity to high voltage lines. During the fiscal year 1953-1954, 692 pole permits were issued.

Two electrical inspectors are assigned to office work. They handle all complaints and requests for information from the public.

One electrical inspector is assigned to the Rehabilitation Program. Now employed under Ord. 8268.

Fourteen electrical inspectors are assigned to districts in the City and each handles all of the electrical work in his assigned district except those items under the Electrical Sales Ordinance.

REHABILITATION PROGRAM

The previously referred to 'Slum Clearance Program' was changed to the 'Rehabilitation Program' in order to conform to the title of the ordinance enacted to further the endeavor of the City to eliminate or correct sub-standard living conditions. The use of the word Rehabilitation instead of Slum appeared to be a welcome change of name to the owners of sub-standard property.

In conjunction with the Department of Public Health and Fire Prevention Bureau, much work has been accomplished in the 'South of Market Area'. Some buildings have been demolished, many others have been rehabilitated and it has been necessary to refer only a minimum to the City Attorney for abatement.

BUILDING CONSTRUCTION

Fiscal Year	Permits	Cost of Construction
1950-1951	8938	\$ 78,432,578
1951-1952	7488	47,066,668
1952-1953	8494	45,920,105
1953-1954 Est.	8601	62,470,265

Bureau of Building Inspection

WORK DONE

The extent of routine operations of this Bureau for the fiscal year, 1953-1954, is set forth in the following tabulation taken from the records of the Central Permit Bureau.

Type of Construction	No. of Permits	Estimated Cost
1A	6	\$ 8,826,463.00
1B	21	15,280,117.00
2	-	-
3	38	2,352,840.00
4	22	463,000.00
5	1,117	20,244,074.00
Alterations	7,397	15,303,771.00
TOTALS	8,601	\$62,470,265.00

Type 1A - Steel frame with reinforced concrete walls and floors. Fire-resistive construction.

Type 1B - Built entirely of reinforced concrete. Fire-resistive construction.

Type 2 - Heavy timber construction with exterior walls of masonry.

Type 3 - Wood frame floors with exterior walls of masonry. Ordinary masonry construction.

Type 4 - Light incombustible frame construction.

Type 5 - Wood frame construction.

BUILDING AND BOILER PERMITS AND INSPECTIONS

The following compilation of statistics of monthly reports indicates the volume of work done during the fiscal year for other than Electrical Inspection, unless noted:

Inspections reported by inspectors of buildings	\$ 53,597.00
Projects remaining on which permits have been issued that have not been reported completed by inspectors of buildings	2,942.00
Complaints that have been reported adjusted by inspectors of buildings	2,758.00
Inspections reported by inspectors of boilers	2,552.00
Complaints and requests for information recorded	262.00
Applications for permits examined by and approved by structural engineers	4,290.00
Applications for permits examined and approved by plan checker	1,430.00

Bureau of Building Inspection

Miles traveled during the year by 29 passenger cars on inspection service includes electrical inspectors	186,613
Permits issued, wiring, fixtures, signs	17,140
Inspections made	60,052
Complaints investigated (found defective)	7,213
Installations uncovered that were not with the department ('sneaked in' jobs)	2,843
Installations in progress as of June 30, 1954	7,417
Installations completed	26,160
Pin ball machine inspections	1,804
Juke box inspections	756
Electrical Sales inspections	4,737
Overhead line inspections	5,122

86,613
17,140
60,952
7,213
2,843
7,417
26,160
1,804
756
4,737
5,122



EQUITABLE LIFE INSURANCE CO.
Montgomery and Sutter Sts.
Dinwiddie Construction Co.



DOWNTOWN CENTER GARAGE
O'Farrell and Mason Streets
Cahill Construction Co.

Bureau of Building Inspection



SAN FRANCISCO HOUSING AUTHORITY
Western Addition Project
Theo. G. Meyer & Sons



UNIVERSITY OF SAN FRANCISCO STUDENTS' RESIDENCE
Golden Gate and Parker Avenues
Barrett Construction Co.

BUREAU OF ARCHITECTURE

*Charles W. Griffith - City Architect

FUNCTIONS

The Bureau of Architecture is concerned with all new and existing City buildings which are under the jurisdiction of the Department of Public Works. The Bureau is charged with the responsibility for the design and construction of new City buildings and the modernization, remodeling, and large maintenance projects of existing City buildings. The activities of the Bureau are divided into two separate but related functions: the preparation of drawings and specifications, and the supervision of construction.

Independent architectural firms are commissioned to design and prepare the working drawings and specifications for new Civic buildings, under the direction of the Bureau. The Bureau assists the client agency in the preparation of the building program, arranges and participates in the many conferences necessary between the architects and the agency, reviews the drawings and specifications, checks all cost estimates closely, and certifies the proper completion of the architectural work through the various stages. The Bureau also coordinates and programs the work of the architects to insure the completion of the drawings and specifications to comply with required construction schedules. When the drawings and specifications are properly completed, the Bureau prepares all necessary forms and data so that bids may be requested and received by the Director of Public Works. Modernization, remodeling, and repair projects are handled directly by the Personnel of the Bureau; and, in general, the same procedures are followed. This phase of the Bureau's work has been increasing while the tremendous new building program, which was principally the result of the 1948 School Bond Issue, is decreasing.

The present work load in the office of the Bureau is being handled efficiently by the organization shown on the chart. Two architects are engaged in the preparation of plans and specifications for the Public Health Work, the Assistant City Architect is personally directing the Fire Department Work and has two architects preparing plans and specifications for fire house reconstruction projects, one architect is fully occupied in the Board of Education work, and one architect is preparing miscellaneous projects and supervising the preparation of specifications. No breakdown

*This Bureau suffered a great loss in the death of Dodge A. Riedy, City Architect, on August 28, 1953. John H. Devitt, Assistant City Architect, served as Acting City Architect until March 1, 1954, when Charles W. Griffith, the present City Architect, was appointed.

Bureau of Architecture

is given for the fifteen draftsmen employed by the Bureau, since their specific assignments may vary from month to month.

The Bureau supervises the construction of both the new building construction and the remodeling, modernizing, and repair projects. Since there are many school projects which can only be processed during the summer school vacation, it is always necessary to employ temporary building inspectors during the summer months. This year forty-seven such school projects are being processed during the summer months, and fifteen temporary inspectors are being employed for periods averaging two and a half months. The permanent inspectors, sixteen in number, are engaged as full-time continuous inspectors on the larger projects.

GENERAL

The following is a resume' of the 1948 School Bond Issue as of the end of the fiscal year:

New Schools or Major Addns. to Existing Schools	Cost	Percent Of Total
Construction Completed (22)	\$20,504,540.00	55%
Construction Under Contract (9)	9,430,352.00	25%
Plans Completed (1)	494,422.00	1%
Plans Under Preparation (8)	7,056,580.00	19%
TOTAL	\$37,485,894.00	100%

Fire Department Bond Issue

The reconstruction and new construction work of the Fire Department Bond Issue progressed extensively during the past fiscal year. Three reconstruction projects were under contract at the end of the fiscal year, and many others were being prepared for advertising. Four new Fire Houses were in preliminary design stage and five others were temporarily delayed pending acquisition of property. It was expected that construction would begin on the first new Fire House of the Bond Issue Program in December 1954 and that construction would begin on three other new Fire Houses in January or February of 1955. A total of nine of the new Fire Houses should be under construction prior to July 1, 1955. The reconstruction of the existing Fire Houses is progressing much faster and it is expected that the reconstruction work will be completed on six of the Fire Houses by July 1, 1955 and that reconstruction work will be in progress on nine other Fire Houses.

Public Health Department Bond Issues

Considerable work was done by the Bureau in collaboration with officials of the Department of Public Health in order to determine feasible Bond Issue Programs for both the San Francisco Hospital and the Laguna Honda Home. The final estimates for these programs, which will be on the ballot in the November election, were \$5,830,500.00 for the modernization of the San Francisco Hospital and \$5,474,730.00 for the modernization of the Laguna Honda Home.

PERSONNEL

The regular staff of the Bureau decreased during the fiscal year. There was, however, an increase in the temporary employees in the drafting rooms due principally to the increased work load caused by the Fire Department Bond Issue and the Public Health Work.

	June 30, 1953		June 30, 1954		Change	
	Reg.	Temp.	Reg.	Temp.	Reg.	Temp.
City Architect	1		1			
Assistant City Architect	1		1			
Architects	7		6		- 1	
Sr. Architectural						
Draftsmen	8		8	2		2
Architectural Draftsmen	1		1	4		4
Office Assistant	2		1	1	- 1	1
Senior Clerk			1		1	
General Clerk Stenogra-						
phers	5		4		- 1	
General Clerk Typists	2	3	2	1		- 2
Supervising Constr.						
Inspector	1		1	1		1
Building Inspectors	21	15	16	15	- 5	
TOTAL	49	18	42	24	- 7	6

The Bureau of Architecture's personnel is divided into four groups according to location. The duties performed by these groups are briefly outlined as follows:

Personnel	Group	Location	Activities
8	1	Room 265, City Hall	Administrative, Conferences, Assembly of Plans and Specifications for bidding, general files, drafting for budget.
9	2	Room 252, City Hall	Inspection estimates, preliminary design program and budget section, analysis of construction.

Bureau of Architecture

Personnel	Group	Location	Activities
18	3	45 Hyde Street	General Drafting Room, specifications, drawings, research, checking, and report section.
31	4	In the Field	Field Inspection.

WORK DONE

The work completed by the Bureau of Architecture during the fiscal year of 1953-1954 was fairly evenly divided between the office and the field. During this year, the value of the work being processed was as follows:

Work Completed	\$ 10,423,865.30
Contracts Under Construction	12,989,306.00
Work Under Preparation	12,582,572.00
TOTAL	\$ 35,995,743.30

The following is a breakdown of the work done, showing the Board or Department for which it was done, and the nature of the work. Details of each specific project will be found in Appendix II.

SUMMARY OF CONSTRUCTION PROGRAM
SHOWING ALL WORK COMPLETED, UNDER CONSTRUCTION AND UNDER PREPARATION
JULY 1, 1953 TO JUNE 30, 1954

WORK COMPLETED

Board of Education	
New School Bldg. Constr.	\$8,543,531.00
Test Borings and Soil Analyses	5,855.50
Miscellaneous Alterations	1,288,620.80
	\$9,838,007.30
Public Health	
San Francisco Hospital	55,470.00
Laguna Honda Home	5,511.00
Sunset Health Center Bldg.	77,874.00
	138,855.00
Fire Department	
New Construction	194,711.00
Alterations	21,252.00
	215,963.00

Bureau of Architecture

Civic Center		
City Hall	19,457.00	
Civic Auditorium	18,736.00	
		\$ 38,193.00
Public Library		
New Construction	154,400.00	
Alterations	19,482.00	
		173,882.00
Miscellaneous		18,965.00
TOTAL WORK COMPLETED		\$10,423,865.30

WORK UNDER CONSTRUCTION

Board of Education		
New School Bldg. Constr.	\$10,570,108.00	
Miscellaneous Alteration	953,036.00	
		\$11,523,144.00
Fire Department		
New Construction	680,318.00	
Alterations	8,832.00	
		689,150.00
Museums		
M. H. deYoung Museum	229,130.00	
		229,130.00
Department of Public Health		
San Francisco Hospital	373,665.00	
Laguna Honda Home	167,973.00	
Sunset Health Center	50.00	
		541,688.00
Civic Center		
City Hall	2,288.00	
		2,288.00
Miscellaneous		3,906.00
TOTAL CONTRACTS UNDER CONSTRUCTION		\$12,989,306.00

Bureau of Architecture

WORK UNDER PREPARATION

Board of Education		
New School Bldg. Constr.	\$ 8,295,322.00	
Miscellaneous Alterations	479,000.00	
		\$ 8,774,322.00
Department of Public Health		
San Francisco Hospital	387,100.00	
Laguna Honda Home	335,340.00	
		722,440.00
Fire Department		
New Construction	2,153,000.00	
Alterations	493,000.00	
		2,646,000.00
Public Library		
New Construction	320,000.00	
		320,000.00
Civic Center		
City Hall	14,329.00	
Civic Auditorium	6,250.00	
		20,579.00
Miscellaneous		99,231.00
TOTAL WORK UNDER PREPARATION		\$12,582,572.00
GRAND TOTAL		\$35,995,743.30

Bureau of Architecture

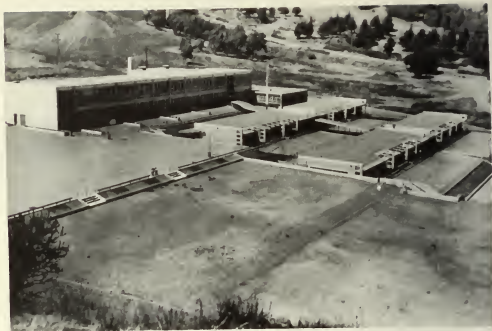


MARINA BRANCH LIBRARY
Appleton & Wolfard, Architecture



CITY COLLEGE OF SAN FRANCISCO
Classroom and Library Building
Milton T. Pflueger, Architect

Bureau of Architecture



SUNNYDALE ELEMENTARY SCHOOL
Ambrose & Spencer, Architects



A. P. GIANNINI JUNIOR HIGH SCHOOL
Thomsen & Wilson, Architects

MAINTENANCE AND OPERATION

Lawrence J. Archer, Assistant Director of Public Works

Maintenance and Operation activities of the Department of Public Works are centered at 2323 Army Street in the four bureaus of Sewer Repair, Street Repair, Building Repair and Street Cleaning, except that the operation of the City's three sewage treatment plants are under direction of the City Engineer.

GENERAL REVIEW OF YEAR'S WORK

In general the work of the maintenance and operation bureaus continued at about the same level as during the preceding year except that the maintenance and repair work load of the Bureau of Building Repair was increased by the addition of a substantial number of public buildings and grounds.

Studies and analyses toward the improvement of methods in operation and the improvement in the use of manpower, material and equipment are being accomplished as the time permits.

PUBLIC BUILDINGS AND GROUNDS

Beginning July 1, 1953, the Bureau of Building Repair was given the responsibility of the maintenance and repair of additional buildings and grounds, pursuant to the Controller's budgetary instructions. The Bureau of Building Repair now provides for the maintenance and repair of all public buildings except for the properties of the following activities:

- (a) California Academy of Sciences
- (b) War Memorial
- (c) California Palace of Legion of Honor
- (d) Recreation and Park Department
- (e) de Young Memorial Museum
- (f) San Francisco Unified School District
- (g) Departments of the Public Utilities Commission

The Bureau of Building Repair now has responsible charge of maintaining and repairing 302 major size buildings exclusive of a great number of various small type structures and utilities at the different activities. This total of 302 buildings includes the 233 buildings added this year by reason of the Controller's instructions.

In order to effectuate a program of maintenance and repair, the assignment of one Assistant Engineer and one Senior Architectural Draftsman was temporarily provided with the objective of:

Maintenance and Operation

- (a) Insuring that those concerned have such knowledge of the conditions of safety and preservation of physical property as will enable appropriate action to be taken at the proper time,
- (b) Avoiding the extra expense of major repairs or replacement through closer attention to routine maintenance and repair,
- (c) Providing detailed information for estimating necessary amount of funds for maintenance and repair work,
- (d) Permitting classification of work according to degree of urgency, so as to permit intelligent preparation of budgets,
- (e) Providing technical consultation and assistance to the operating activities in the appropriate maintenance and repair of properties,
- (f) Providing successive reports on all structures and utilities so as to form a consecutive historical record of essential facts relating to maintenance and repair work and their costs.

The continued and permanent employment of at least one Assistant Engineer and one Senior Architectural Draftsman is essential to the purpose of detecting defects and deterioration in improvements within sufficient time to prevent costly repair or replacement that otherwise would be certain to follow at a later date. Permanent employments were requested in the 1954-1955 budget for this work, but the services were not approved by the Board of Supervisors. Without provision for continuing these employments it became necessary, in June, to defer a program that was well underway in the performance of its objective.

MARIPOSA SEWAGE PUMP STATION

The new Mariposa Sewage Pumping Station, located on Mariposa Street near Third Street, was placed in operation on June 1, 1954 by the Bureau of Street Repair. The station is constructed of reinforced concrete and is supported upon piles. It has a maximum pumping capacity of 1,300 G.P.M. against a dynamic head of 65'. The pumping station proper was constructed at a total cost of about \$138,000 by Charles L. Harney Company.

VEHICLES EQUIPPED WITH RADIO TELEPHONE

On Monday, March 1, 1954, the Public Works Radio Communication System started normal week-day operation from 8:00 AM to 5:00 PM as a part of the communications required by the San Francisco Disaster Corps service. The radio system is also available for routine communications of the department and it has especially aided the expeditious response in the various operations of the maintenance and operation bureaus that require immediate attention.

The Department of Public Works Radio System consists of one Base Station on Twin Peaks, two control centers and 29 two-way radio equipped cars. Fifteen of the radio cars are assigned to the maintenance and operation bureaus on allocation as follows:

Sewer Repair	4
Street Repair	4
Building Repair	2
Street Cleaning	5

NEW MUNICIPAL ASPHALT PLANT

A contract was awarded on May 5, 1954 to Hart and Hynding, Inc. for the construction of a new municipal asphalt plant at a bid price of \$407,101.

The new plant has a designed mixing capacity of 90 tons per hour as compared to an output capacity of about 35 tons per hour at the present outmoded plant.

Substantial reductions in operating costs should follow the placing of the new plant in operation about January 1955. With the start of operations at the new asphalt plant, the old plant will be taken out of service and the property will no longer be required for use by the Bureau of Street Repair.

MAINTENANCE YARD EXPANSION

The old City Incinerator site at Kansas and Marin Streets, which adjoins the Maintenance Yard, is expected to be vacated by the present leaseholder in August, 1954 and preparations have been made for its utilization in conjunction with Yard operations.

Several improvements to the Incinerator property and the Maintenance Yard should lead to substantial economies in Yard operations. Under present operating conditions, numerous daily truck trips are required to the Central Warehouse at 15th and Harrison Streets for materials and supplies and frequent truck

Maintenance and Operation

trips by the Traffic Painters are required to the Asphalt Plant for the cleaning of traffic painting stencils.

By providing storage facilities at the Incinerator site, operating economies amounting to well over \$25,000 a year should be effected and, in addition, a present storage yard at Alameda and Harrison Streets, having a market value of about \$30,000, could be released from use by the Bureau of Building Repair.

In order to provide for these improvements at the Incinerator site and the Maintenance Yard, a request of \$150,000 for improvement was made in the 1954-55 budget but failed to receive the approval of the Board of Supervisors.

TRUCK WITH MECHANICAL LOADER

A Holmes-Owen loader mounted on a 2-ton truck was purchased by the Bureau of Street Repair at a cost of about \$7,000. This new equipment is scheduled to be placed in operation during August, 1954 for picking up rubbish dumped at pre-determined locations by the motor sweepers, for cleaning street surfaces after completion of sewer installations or repairs, for removing sewer cleanings brought to the street surface through use of other equipment and for various other utility work such as removal of spoil resulting from landslides.

This new equipment will be used extensively in truck loading operations that previously were necessarily performed by manual labor crews at relatively high labor costs.

RAINFALL

Rainfall has considerable bearing upon the extent of field operations during the winter months. The annual rainfall for San Francisco, as recorded by the Federal Weather Bureau from June 30, 1953 to July 1, 1954 amounted to 14.27 inches as compared to a rainfall of 21.10 inches in 1952-53 and a normal rainfall of 20.51 inches.

Monthly precipitation, in inches, was as follows:

July, 1953	Trace	January, 1954	3.11
August	0.07	February	2.42
September	Trace	March	4.56
October	0.34	April	0.82
November	1.88	May	0.11
December	0.82	June	0.14

Maintenance and Operation

EMPLOYMENTS

The Salary Ordinance of 1953-54 allowed a total of 980 positions in the maintenance and operation bureaus; a decrease of 17 positions from the previous year and a decrease of 28 positions from the allowance in 1949-50. Table A provides a tabulation of employment allowances during the past five years.

The Salary Ordinance for 1954-55 provides a total of 989 positions for the Maintenance and Operation Bureaus.

EXPENDITURES

Expenditures from budgeted funds of the maintenance and operation bureaus amounted to a total of \$5,159,649.10 in 1953-54 as compared to a total of \$4,014,809 in 1952-53; an increase of \$1,144,840.10. The increased cost of operation was due mostly to additional maintenance and repair work taken over by the department, salary and wage increases and additional costs of materials and supplies.

With an estimated total population of 785,000 for the City and County of San Francisco, the year's expenditures from budgeted funds of the maintenance and operation bureaus amounts to \$6.57 per capita.

A breakdown of expenditures is tabulated in Tables B, C, and D.

Maintenance and Operation

TABLE A
POSITIONS ALLOWED BY ANNUAL SALARY ORDINANCES
FISCAL YEARS 1949-50 to 1953-54 INCLUSIVE

	1949-50	1950-51	1951-52	1952-53	1953-54
Bureau of Sewer Repair					
Budget-Sewer Repair	5	5	6	6	6
As Needed Service	133	133	130	124	117
Budget-Pump Stations	*	8	8	8	8
Totals	138	146	144	138	131
*Operation of Pump Stations was transferred April 1950 to the Bureau of Sewer Repair					
Bureau of Street Repair					
Budget-Street Repair	136	135	134	131	151
Bridges and Tunnels	23	23	23	23	24
Interdepartmental Service	77	50	50	36	10
Totals	236	208	207	190	185
Bureau of Street Cleaning					
Budget	326	332	332	332	332
As Needed Service	25	25	25	25	25
Totals	351	357	357	357	357
Bureau of Building Repair					
Budget	124	124	125	157	187
Interdepartmental Service	159	168	177	162	133
Totals	283	292	302	319	320
Total for Maintenance and Operation	1,008	1,003	1,010	1,004	993
(Exclusive of Sewage Treatment Plants)					

Note: Interdepartmental and As Needed Services are not established as continuing positions but are for services as required when funds are provided for the purpose involved.

Maintenance and Operation

TABLE B EXPENDITURE RECORD
FISCAL YEARS 1952-53 and 1953-54
AS BUDGETED BY THE BUREAUS INDICATED

Bureau of Sewer Repair	Gross Expenditures	
	1952-53	1953-54
1 - Sewer Repair (Exclusive of Side Sewers paid by property owners)		
(a) Salaries and Wages	\$ 464,625	\$ 497,999.49
(b) Contractural Services	31,273	31,377.89
(c) Truck Hire	58,624	60,117.23
(d) Materials and Supplies	45,529	43,342.06
(e) Equipment-Replacement	3,138	468.14
(f) Equipment-New	5,370	8,128.20
(g) Services of Other Departments	8,922	9,329.43
Subtotal	\$ 617,481	\$ 650,762.44
2 - Pump Stations		
(a) Salaries and Wages	\$ 37,761	\$ 42,202.22
(b) Contractural Services	19,712	27,983.01
(c) Materials and Supplies	1,943	1,685.38
(d) Equipment-Replacement	3,667	4,993.83
(e) Equipment-New	0	748.37
(f) Services of Other Departments	2,017	2,193.24
Subtotal	\$ 65,100	\$ 79,806.05
Total for Bureau Sewer Repair	\$ 682,581	\$ 730,568.49
Bureau of Street Cleaning		
(a) Salaries and Wages	\$1,364,852	\$1,479,284.96
(b) Contractural Services	61,115	63,681.52
(c) Truck Hire	6,006	6,391.91
(d) Heat, Light and Power	73	72.92
(e) Materials and Supplies	28,275	32,110.05
(f) Equipment-New	584	458.56
(g) Equipment-Replacement	8,986	51,230.65
(h) Services of Other Departments	3,642	3,899.08
Total for Bureau Street Cleaning	\$1,473,533	\$1,637,129.65

Maintenance and Operation

TABLE B (CONT)

		Gross Expenditures (Cont)	
		1952-53	1953-54
Bureau of Street Repair			
1 - Street Repair			
(a)	Salaries and Wages	\$ 549,811	\$ 681,614.50
(b)	Contractural Services	81,379	76,229.20
(c)	Truck Hire	38,820	45,558.87
(d)	Materials and Supplies	136 361	174,786.76
(e)	Equipment-New	8,069	1,689.41
(f)	Equipment-Replacement	7,470	29,718.37
(g)	Fixed Charges	4,136	5,936.43
(h)	Retirement Allowance	87,425	135,990.86
(i)	Services of Other Departments	7,741	8,467.54
	Subtotal	\$ 921,212	\$ 1,159,991.94
2 - Bridges and Tunnel			
(a)	Salaries and Wages	\$ 114,339	124,433.51
(b)	Contractural Services	9,552	46,891.74
(c)	Materials and Supplies	3,342	2,911.23
(d)	Equipment-New	947	428.48
(e)	Equipment-Replacement	0	0
(f)	Services of Other Departments	5,954	6,260.76
	Subtotal	\$ 134,134	\$ 180,925.72
	Total for Bureau of Street Repair	\$1,055,346	\$1,340,917.66
Bureau of Building Repair			
(a)	Salaries and Wages	\$ 626,388	\$ 719,954.35
(b)	Contractural Services	21,849	23,474.35
(c)	Truck Hire	922	1,275.51
(d)	Repairs to Public Buildings	86,924	444,900.39
(e)	Monuments, Statues-Maintenance	161	26.08
(f)	Materials and Supplies	27,490	38,494.45
(g)	Fuel Oil	32,760	32,475.99
(h)	Equipment-New	2,502	6,486.76
(i)	Equipment-Replacement	641	20,915.04
(j)	Traffic Striping-Engineering	0	159,089.98
(k)	Services of Other Departments	3,642	3,940.40
	Total for Bureau of Building Repair	\$ 803,349	\$1,451,033.30
	TOTAL FOR MAINTENANCE AND OPERATION BUREAUS	\$4,014,809	\$5,159,649.10

Maintenance and Operation

TABLE C
INTERDEPARTMENTAL AND OTHER EXPENDITURES
NOT BUDGETED BY MAINTENANCE AND OPERATION BUREAUS

(Cont)
953.54

Bureau	For	Expenditures	
Sewer Repair	Side Sewer Installations - Paid		
614.50	By Property Owners	\$ 107,444.23	
229.20	Bureau of Engineering	6,735.51	
558.87	Bureau of Architecture	2,096.82	
786.76	Building Repair	289.06	
689.41			
718.37	Total	\$ 116,565.62	
936.43			
990.86	Street Repair	Bureau of Building Repair	\$ 2,006.59
467.54		Public Utilities	15,781.89
		State Highways	7,926.62
991.94		Bureau of Sewer Repair	25,079.87
		Bureau of Engineering	4,184.91
		Board of Education	4,656.23
433.51		Others	2,100.38
891.74			
911.23	Total	\$ 61,736.49	
428.48			
0	Building	Board of Education	\$ 809,167.36
260.76	Repair	Bureau of Street Repair	8,905.51
		War Memorial	10,461.35
925.72		Legion of Honor	4,398.44
		Recreation and Park Department	6,524.63
		deYoung Museum	897.18
917.66		Public Utilities Commission	7,720.29
		Bureau of Engineering	14,433.68
954.35		State Highways	2,906.01
474.35		Traffic Striping-Others	27,423.96
275.51			
900.39	Total	\$ 892,838.41	
26.08			
494.45	Street Clean-	State Highways	\$ 57,556.11
475.99	ing		
486.76			
915.04		GRAND TOTAL	\$ 1,128,696.63
089.98			
340.40			
033.30			
649.10			

Maintenance and Operation

TABLE D - SUMMARY
TOTAL EXPENDITURES BY MAINTENANCE AND OPERATION BUREAUS

Bureau	Expenditure from Bureau's Budgeted Funds	Expenditure Funds of Other Sources	Total Expenditure
Sewer Repair	\$ 730,568.49	\$ 116,565.62	\$ 847,134.11
Street Repair	1,340,917.66	61,736.49	1,402,654.15
Building Repair	1,451,033.30	892,838.41	2,343,871.71
Street Cleaning	1,637,129.65	57,556.11	1,694,685.76
Totals	\$5,159,649.10	\$1,128,696.63	\$6,288,345.73

Maintenance and Operation

BUREAU OF SEWER REPAIR
Emile F. Muheim, Superintendent

FUNCTIONS

The Bureau of Sewer Repair has the responsibility of maintaining and operating the sewerage system of San Francisco, excluding only the three sewage treatment plants.

Included in these operations is the maintenance of over 800 miles of main sewers which are of the combined type handling all surface run-off as well as sanitary sewage. These sewers range in size from 6-inch vitrified clay pipe to three compartment reinforced concrete sewers, each compartment being 7 feet 6 inches by 10 feet 0 inches.

An important feature of the sewerage system is the operation and maintenance of 13 sewage pumping stations. These stations vary in capacity from 20,000 to less than 200 gallons per minute.

Other functions of the Bureau include the investigation and correction of complaints, cleaning the system by mechanical means designed by Bureau personnel, periodically cleaning catchbasins and the operation of a gas detection crew. A detailed description of the activities of the gas detection crew will be found on Pages 92 to 99 of the 1952-1953 Annual Report.

Close liaison is maintained with the Bureau of Engineering in the development of plans for sewer improvements, extensions and major repairs.

ORGANIZATION

The operations of the Bureau are carried out by 130 employees classified as follows:

1 Superintendent	6 Bricklayers
2 Assistant Superintendents	8 Chauffeurs
1 Assistant Electrical Engineer	10 Hodcarriers
3 General Foremen	45 Cribbers
2 Operating Engineers	17 Sewer Cleaners
5 Junior Operating Engineers	30 Laborers

The various types of work are done by organized crews under the direct supervision of the three general foremen, working 40 hours per week. One crew works the night shift from 4:30 P.M. to 12:30 A.M.; one truck and operator works on Saturdays, Sundays, and holidays maintaining safety lights and barricades on current incomplete jobs. On week-ends and holidays during the winter months, a flushing truck and crew are on duty if weather conditions

Maintenance and Operation

warrant. Supervisory personnel take turns as emergency standby during all weekends and holidays.

The following work was accomplished during the past year:

ITEM	NO.	COST
Brick Sewer Repairs	131	\$ 65,856.88
Catch Basins Cleaned	15,059	130,068.09
Catch Basin Repairs	221	30,702.00
Complaints Investigated	8,152	-----
Concrete Sewers Repaired	12	3,331.46
Main Sewer Flushing	118	94,131.80
Manhole and Catch Basins Constructed	44	22,711.82
Manhole Repairs	113	10,069.34
Pipe Sewers Repaired	487	175,740.86
Sewer Cleaning	1,380 cu. yd. silt	101,352.08
Side Sewers - Repair and Install	667	109,535.67*
Silt Removed - Catch Basins	9,056 cu. yd.	
Miscellaneous	---	39,078.78
Gas Detection, Manholes Tested	7,236	7,740.03
TOTAL		\$680,783.14

*This amount paid by property owner deposit.

CATCH BASIN CLEANING

The surface runoff of 800 miles of paved streets is collected in approximately 25,000 catch basins connected to a combined sewerage system. Water sealed traps prevent the emersion of gases and obnoxious odors and also tend to prevent debris from entering the sewers. A standard catch basin can accumulate 1½ yards of debris which must be removed at regular intervals.

The City is divided into eight catch basin cleaning zones of various sizes, the smaller zones being in the downtown area where the basins must be cleaned more often.

Catch basins are cleaned out by the use of Elgin Eductors mounted on Mack Truck chassis and manned by a crew consisting of one chauffeur and two laborers. The principal parts of an eductor consist of a water tight steel body holding 1,240 gallons of water and mounted on a truck chassis; a 3-inch centrifugal pump operated by a gasoline engine; and a nozzle assembly which lowers into a catch basin from a hose-reel. Water is pumped from the tank across a small opening in the nozzle assembly creating a suction which lifts the muck to the tank. A series

Maintenance and Operation

of baffle plates in the water tank cause the solids to settle out of suspension and the water flows to the front end of the tank to be used over again.

The efficiency of an eductor varies with the different types of debris encountered in catch basins. When sand is encountered the eductor is a masterpiece of efficiency, but when a combination of sand and other materials, such as broken glass, sticks, twigs, wire, rags, rocks, or other debris is found, the efficiency naturally is impaired and the larger bits of refuse are removed with hand tools.

During the past year 15,059 catch basins were cleaned with 8 eductors at an average cost of \$6.75 per basin. The average time to clean a basin was 38 minutes which included travel time.

SIDE SEWERS

Side sewers are the connecting links between the main sewer system and the house, store or factory. They are defined as that part of the sewer between the main sewer and a point 12 inches inside the curb line. By provisions of the Municipal Code, the construction, reconstruction or repair of a side sewer shall be accomplished by Public Contract or by crews of this Bureau. The cost of this work is borne by the property owner requesting such service.

The upper end of each side sewer must be at a depth sufficient to provide adequate sewerage to the property served, but, in no case shall the invert at the curb line be less than 4 feet deep. In industrial and commercial districts this depth shall be 12 feet if possible. The fall of a side sewer shall not be less than 1/4 inch per foot of pipe.

In residential areas the side sewer must not be less than 6 inches in diameter and in all other districts not less than 8 inches in diameter; and, in all cases, the pipe shall be of vitrified clay material.

Work on the average side sewer by this Bureau is performed by a crew of two cribbers. Pavement breaking and replacing is done by other crews using an air compressor and dump truck.

The number of new side sewers being placed by the Bureau is decreasing since in all new subdivisions or street work jobs all sewers and side sewer connections are placed, prior to the street paving, by the contractor doing this work.

Maintenance and Operation

MAIN SEWER CLEANING

Many of the sewers in San Francisco, because of topography, are constructed to a minimum flat grade, and, as a result, during the dry season sand and silt are deposited on the invert in quantities requiring periodic cleaning.

In sewers large enough for crews to enter and work efficiently, the material is removed by the use of wheel barrows, buckets and windlass hoist.

The general practice in cleaning the smaller sewers or large sewers in tidal areas is to use special mechanized equipment. This equipment, of which the Bureau has 6 units, consists of a truck mounted crane with demountable hoist, 2 gasoline engine 7 H.P. motors, guide wheels, cable and buckets, most of which has been designed by Bureau personnel.

The cleaning operation is done by dragging the special bucket through the sewer between manholes by drag cable rigged through guide wheels and to the engine-operated windlass at either end. The crew for this operation includes 4 men, one of whom is the truck driver. The material removed is disposed of at the fill and cover dump just outside the City limits. In this system from 6 to 8 times as much cleaning is done than by hand methods formerly used. Approximately 7.6 miles of sewers were cleaned in the past year.

GAS SURVEY REPORT

Since the organization of the gas survey crew in November 1951, approximately 17,829 manholes have been tested for toxic and explosive gases. Over two-thirds of the entire City and County of San Francisco has been covered by the survey and approximately another year will be required before the entire city has been covered.

Table E will show the number of manholes tested each year and also the number of manholes containing hydrogen sulphide, carbon monoxide, oxygen deficiency and explosive gases.

None of the manholes tested for carbon monoxide showed over a 0.003% concentration of the gas. Most of these affected manholes were found in the downtown area on streets which have a heavy flow of traffic, leading to the belief that the carbon monoxide is probably due to automobile exhaust fumes entering the manhole through the ventilation holes in the cover.

It is interesting to note that in over 95% of the manholes which contained explosive gas based on the lower 5% explosive

Maintenance and Operation

limit of methane gas, it was found that the condition was due to natural gas leaks.

Explosive gas in several manholes was caused by the dumping of deleterious chemicals into the sewer system and these cases were turned over to the industrial waste survey for investigation.

Sludge samples from two manholes containing over 20% explosive gas were taken to the North Point Treatment laboratory for analysis to reveal if the samples were in the digestive stage and responsible for the explosive gas. The results of the tests revealed that the sludge was not the cause for the high concentration of explosive gas. It can be safely stated at this point that explosive gas is not likely to be caused by the digestion of sludge in a sewer system due to the number of variables involved. High concentration of explosive gases found in manholes is either a result of natural gas leaks in the vicinity of the manhole or the dumping of explosive volatile chemicals in the sewer.

The gas detection unit was used to test two empty digester tanks: one at Southeast Treatment Plant and one at Richmond Sunset Treatment Plant. They were shut down for an inspection of the interior structure and to remove the sand and indigestible material from the bottom of the tank. The tanks were tested each morning before the men entered the tank to start the cleaning operation and no evidence of hydrogen sulphide, explosive gas or oxygen deficiency was found in any of the tanks during the time they were being cleaned.

The gas unit also conducted tests in two sewer tunnels, the Palou Sewer Tunnel (3/4 mile long) and the Lake Street Sewer Tunnel (over 1 mile long). Hydrogen sulphide gas was found in each of the tunnels but the concentrations were below 25 PPM and not dangerously toxic according to U. S. Bureau of Mines safety standard. No indication of explosive gas or oxygen deficiency was found in either tunnel.

The costs of operating the gas detection unit for the fiscal year were as follows:

Chemist (\$340.00 per month).....	\$4,080.00
Laborer (\$16.80 per day)	3,242.40
Supplies for testing equipment	91.90
Repairs to Truck No. 417	127.27
Gas and Oil	165.71
Tires and Misc. Expenses	32.75
Total	\$7,740.03

TABLE E

GAS SURVEY UNIT

Summary of Test Data

Item	Y	E	A	R
	1951-1952 (6 Months)	1952-1953	1953-1954	
Total Manholes Tested	2,975	7,154	7,236	
Containing H ₂ S Gas	0	1 (Trace)	0	
Containing Oxygen Deficiency	6	14	6	
Containing CO Gas	14	79	4	
Over 20% Explosive Gas	27	120	78	
3% to 20% Explosive Gas	172	799	402	

H₂S -- Hydrogen Sulphide

CO -- Carbon Monoxide

SEWAGE PUMPING STATIONS

GENERAL

The responsibility for the operation and maintenance of thirteen sewage pumping stations during the 1953-1954 fiscal year was under the jurisdiction of the Bureau of Sewer Repair and supervised by an Assistant Electrical Engineer. Descriptive information for each of the sewage pumping stations can be found on Pages 86 to 92 inclusive of the 1952-1953 Annual Report with the exception of the Mariposa Street Station which is given below.

MARIPOSA STREET PUMPING STATION

This station is located on the East line of the new Embarcadero Extension at the foot of Mariposa Street. The station was completed March 9, 1954 and put into operation on June 1, 1954.

The contributory sanitary border area covers 150 acres and its boundaries are: Seventeenth to Twenty-Second Streets and Illinois to Iowa Streets. Normal average daily flow is 550,000 gallons which is pumped through a 10-inch force main and discharged into a 16-inch gravity sewer on Third Street south of Twenty-Second Street.

Equipment includes two 5-inch, Vertical, single stage, two-speed pumps rated at 1,080 G.P.M. against a total dynamic head of 53 feet at high speed and 380 G.P.M. against an approximate head of 35 feet at low speed, with each pump being driven by a 220 Volt, 3 Phase, 60 Cycle, 25 H.P. Motor.

Maintenance and Operations

OPERATIONS

The operating personnel for the thirteen stations consisted of:

- 1 Assistant Engineer, Electrical
- 2 Stationary Operating Engineers
- 7 Stationary Junior Operating Engineers

During the year it was necessary to acquire two additional Junior Operating Engineers for the regular and relief shifts at the new Mariposa Station, for the relief of Sea Cliff No. 2 and the maintenance of a number of automatic stations. At the present time, the Hunters Point and Pinelake Stations are under construction and are expected to be completed August 1, 1954 and September 15, 1954 respectively. The Pinelake Station will replace an existing temporary station constructed in 1944.

MAINTENANCE AND REPAIRS

Maintenance and repairs for the sewage pumping stations accomplished during the year were as follows:

1) Commercial Street -- Repaired starter and clutch to auxiliary pump gas engine and painted floors and pumps.

2) Fulton Street -- Serviced suction valves to both pumps, relocated electric heater and thermostat, welded pin holes in main discharge line and repaired flowmeter receiver and transmitter.

3) Hyde Street -- Overhauled couplings to both pumps, serviced starters to both pumps and repaired flowmeter receiver and transmitter.

4) Lakeshore -- Repaired concrete louvres, installed new float, repaired control circuit to No. 1 Pump, repaired both doors and locks, painted floors, installed new transformer pad for electric service to station and repaired flowmeter receiver and transmitter.

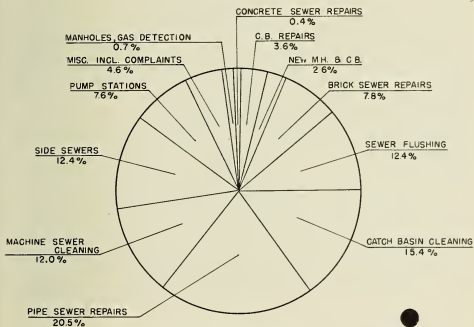
5) La Place Canyon -- Drilled access holes to both pumps.

6) Marina -- Repaired flowmeter receiver and transmitter, overhauled No. 3 pump recording ammeter, repaired No. 2 discharge valve, installed new pulley to vent fan, painted sump room, floors and station equipment, repaired line to hydrostatic tank, installed new electric water heater, installed new seal water time meter, repaired No. 3 pump, removed old and installed new No. 2 pump, overhauled No. 3 pump starter and checked all control circuits.

SEWAGE PUMPING STATIONS - UNIT COST DATA 1953-1954

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Station	Million Gallons Pumped	Total KWH	KWH per Million Gallons	Unit Cost per KWH	UNIT	COST	PER	MILLION	GALLONS	PUMPED	FOR
					Power	Heat & Light	Salaries (Personnel, Supervisory & Salaries of Other Dept.)	Contractual (Auto, Equipment Maintenance & Engineering)	Materials & Supplies	Equip-ment	Totals
General	--	--	--	--	--	--	\$ 1.537	\$ 2.585	\$.065	--	\$ 4.187
Commercial	290.220	43,020	148	\$.020	\$ 2.965	\$ 3.265	41.208	1.909	.842	--	46.189
Fitzgerald	21.880	7,280	333	.020	6.654	--	8.422	1.389	.674	\$17.096	34.235
Fulton	47.718	22,240	464	.025	11.852	--	10.021	17.418	3.068	--	42.359
Hunters Point	--	--	--	--	--	--	.001	--	--	--	.001
Hyde St.	39.621	6,056	153	.020	3.057	--	7.084	4.981	5.273	--	20.395
Lakeshore	100.817	47,680	473	.020	9.459	--	4.741	11.730	.490	--	26.420
La Place	10.633	3,986	375	.020	7.497	--	18.222	2.859	.419	--	28.997
Marina	2,332.363	445,440	199	.014	2.638	.105	5.974	.844	.177	2.195	11.933
Mariposa	13.474	16,000	1188	.020	23.749	--	50.379	3.657	4.054	--	81.839
Park Merced	137.881	134,400	975	.019	17.931	--	38.470	4.716	1.144	--	62.261
Pinalake	2.423	1,254	518	.020	10.351	--	25.147	12.546	1.841	--	49.885
Sea Cliff #1	2.575	1,004	390	.020	7.768	--	37.125	11.806	1.732	--	58.761
Sea Cliff #2	91.044	66,880	733	.020	14.682	--	58.225	17.671	1.578	--	82.166
Vicente	56.300	32,080	570	.020	11.396	--	9.513	13.566	.376	6.646	41.497
Totals	3,146.957	827,320	263	\$.01655	\$ 4.353	\$.103	\$14.086	\$ 4.712	\$.539	\$ 1.865	\$25.658



HOW DOLLAR IS SPENT



38



131



10,444 CUBIC YARDS
SILT REMOVED



24 HOUR
OPERATION

BUREAU OF
SEWER REPAIR

Maintenance and Operations



SEWER CLEANING UNIT

THIRD AND CHANNEL STREETS BRIDGE
New Steel Deck

Maintenance and Operations

7) Park Merced -- Repaired electric heater, painted floors and repaired flowmeter receiver and transmitter.

8) Sea Cliff No. 2 -- Installed new cable to float control, overhauled No. 2 pump and repaired flowmeter receiver and transmitter.

9) Vicente Street -- Installed new No. 1 Pump, painted floors and equipment

BUREAU OF STREET REPAIR Fred D. Brown, Superintendent

FUNCTIONS

The major part of the activities of the Bureau of Street Repair concern the routine maintenance and repair of the City's streets and appurtenant structures, the maintenance and operation of three lift bridges and the maintenance and operation of a tunnel. Minor work other than routine maintenance and repair is performed by order of the Director of Public Works. A considerable amount of paving is done for other departments.

Routine work includes the maintenance and repair of streets, gutters, curbs, retaining walls, public stairways, pedestrian underpasses and overpasses, guard rails and fences; the maintenance of City dumps; the maintenance and operation of lift bridges and a tunnel.

Work ordered by the Director includes traffic channelization, the maintenance of planted areas in streets, the construction of minor structures appurtenant to streets, and emergency work for the protection of the City and/or the public.

Work performed for other departments or bureaus includes the repair of pavement in Municipal Railway track areas, the repaving of trenches opened by the Bureau of Sewer Repair for the installation or repair of side sewers, the repair of state highways within the City, and the repair of pavements in school yards and the yards of other City institutions.

The City's charter provides that work on any one job shall not exceed a cost of \$2,000. It also prohibits work on unaccepted streets, except in emergency, and on sidewalks in front of private property. Unaccepted streets are those streets that have not been properly improved and officially accepted for maintenance and repair by the City.

Activities are further limited by state law governing the expenditure of monies from which the bureau is financed.

Maintenance and Operation

A detailed description of the operation of the City's three lift bridges will be found elsewhere in this report.

ORGANIZATION

Under the general direction of the superintendent the work of the Bureau is performed by the Asphalt, Concrete and Sealing Divisions, each under the general supervision of a general foreman; the Asphalt Plant, under the general supervision of a foreman; and the Bridges and Tunnel Division, under the general supervision of a chief operating engineer.

The organization of the Bureau during 1953-1954 was as shown in the schedule which is a part of this report. There was only slight variation in the composition of the crews or in the total number of employments.

The budget and salary ordinance provided for 151 full time employments for Street Repair and 24 full time employments for Bridges and Tunnel.

The full time services of one bookkeeper and one clerk, and the part time services of one watchman, one operating engineer and one chief operating engineer were furnished by the Bureau of Accounts and the Bureau of Building Repair. These bureaus were properly compensated for the services furnished.

The organization schedule shows three Engineers, H & P Engines, and 16 Asphalt Finishers. The Bureau has continuous need for four engineers, but the authorities were reluctant to create an additional employment. One position of Engineer, H & P Engines, was created and one position of Asphalt Finisher was abolished, effective March 16, 1954.

The organization schedule also shows a Labor Foreman in charge of each of three cleanup crews. The lack of a Civil Service list of eligibles made it difficult to provide adequate supervision for two of these crews when one foreman became disabled and one retired. Recommendation was made that these positions be reclassified as Labor Sub-foreman, a more appropriate classification.

Retirement or death deprived the City of the services of the following employees, all of whom were quite highly esteemed:

Joseph Gatto	Chauffeur	Retired
Thomas Burns	Laborer	Retired
John J. McHugh	Laborer	Retired
Harry Schlichtmann	Engineer, H & P Engines	Retired
Philip Huling	Chauffeur	Retired
Andrew McCarthy	Laborer	Retired

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Maintenance and Operation

Harry P. Hackett	Labor Foreman	Retired
John J. Collins	Laborer	Retired
Eugene W. Harmon	Engineer, H & P	
	Engines	Deceased
Frank Deutschman	Labor Foreman	Deceased

EQUIPMENT

A list of major equipment and its normal use will be found in the organization schedule which is a part of this report.

The Bureau acquired an additional 3/4 ton pickup truck during the year and replaced one passenger car, one conventional dump truck and one dump truck with workmen's compartment.

The new dump truck with workmen's compartment is to be used for hand-loaded cleanup work. The body was equipped with side gates to facilitate loading.

Funds were provided for the purchase of a new truck equipped with a front end loader, delivery of which will not be made until after the start of the new year.

ASPHALT PLANT

During the year the Municipal Asphalt Plant produced 37,815 tons of asphaltic mixtures for a cost of \$188,832 for labor, materials and plant charges - equivalent to \$4.99 per ton.

37,039 tons were produced during 1952-1953 for a cost of \$4.74 per ton. The greater cost for 1953-1954 was due to increases in labor rates and materials prices of approximately 6% and 7% respectively.

39,850 tons of materials were required to produce the 37,815 tons of mixtures; the loss of moisture, dust, etc. was, therefore, 5.11%.

This was undoubtedly the last full year of service of the present antiquated plant which has been producing the Bureau's asphaltic mixture since 1915. Work on a new modern 3 000-pound batch plant was started in June 1954 and should be completed about the middle of the coming fiscal year.

Operation of the present plant required the full time services of ten men. Four additional laborers were required, part time, to unload sand.

Maintenance and Operation

WORK PERFORMED

Work performed during 1953-1954 included the major items and quantities listed below.

Machine Resurfacing	3,165,500 sq. ft.
Hand Resurfacing	485,500 sq. ft.
Repairs, hot asphaltic mixtures	1,386,700 sq. ft.
Repairs, emulsified asphalt armor coat	172,100 sq. ft.
Brick and concrete pavement	7,900 sq. ft.
Trenches repaved, asphalt	25,700 sq. ft.
Trenches repaved, concrete	5,300 sq. ft.
Concrete curb, repaired or replaced	9,100 lin. ft.
Concrete curb, reset	9,600 lin. ft.
Granite curb, replaced	3,100 lin. ft.
Granite curb, reset	12,400 lin. ft.
Granite curb, redressed	9,150 lin. ft.
Concrete sidewalk	47,200 sq. ft.
Cracks sealed	1,964,400 lin. ft.
Traffic stripes removed	22,100 lin. ft.
Castings reset to grade	400 each

Work performed for other bureaus and departments included the following major items and quantities:

State Highways, asphalt pavement	12,600 sq. ft.
Municipal Railway, asphalt pavement	67,100 sq. ft.
Municipal Railway, concrete pavement	450 sq. ft.
School Yards, asphalt pavement	19,600 sq. ft.
Sewer Repair, side sewer trenches, asphalt	18,500 sq. ft.
Sewer Repair, side sewer trenches, concrete and brick	2,900 sq. ft.
Laguna Honda Home, asphalt pavement	7,600 sq. ft.
San Francisco Airport, asphalt pavement	2,300 sq. ft.

Comparison with the previous year shows a substantial increase in most quantities.

UNIT COSTS

Unit costs for 1953-1954 were generally lower than 1952-1953 despite an increase in labor rates and material prices of approximately six percent.

The two major functions for which unit costs increased appreciably are Hand Resurfacing and Asphalt Repair. An increasing amount of existing pavement surface is being removed in an effort to improve the quality of the work. The cost of necessary compressor work and clean-up is appropriately charged.

Maintenance and Operation

Some of the more important unit costs, with comparable costs for 1952-1953, are listed below. They include all indirect and overhead charges.

Machine Resurfacing	1953-1954	1952-1953
Cost per square foot	\$ 0.0554	\$ 0.0548
Cost per ton	\$ 8.07	\$ 8.03
Cost per ton, hauling, laying and rolling, only	\$ 3.08	\$ 3.29
Square feet per ton, average	145.66	146.65
Hand Resurfacing		
Cost per square foot	\$ 0.1142	\$ 0.0906
Cost per ton	\$ 14.57	\$ 11.27
Cost per ton, hauling, laying and rolling, only	\$ 9.58	\$ 6.53
Square feet per ton	127.65	124.43
Asphalt Repairs		
Cost per square foot	\$ 0.2090	\$ 0.1928
Cost per ton	\$ 29.56	\$ 27.49
Cost per ton, hauling, laying and rolling, only	\$ 24.57	\$ 22.75
Square feet per ton	141.38	142.63
Miscellaneous		
Brick and concrete pavement, per square foot	\$ 1.62	\$ 1.72
Curb work, per linear foot	\$ 2.40	\$ 3.02
Curb Dressing, per linear foot	\$ 2.31	\$ 2.41
Concrete sidewalk, per square foot	\$ 0.962	\$ 0.966
Reset castings, per each	\$ 60.83	\$ 62.29
Side sewer trench paving, per square foot	\$ 0.570	\$ 0.536

BRIDGES

The City maintains and operates three bridges for vehicular traffic crossing navigable waterways. These bridges are located at Third and Channel Streets, Fourth and Channel Streets and Third and Arthur Streets.

Normal operation provides for continuous service although openings between the hours of 7:00 A.M. to 9:00 A.M., 12:00 noon to 1:00 P.M. and 4:00 P.M. to 6:00 P.M. are restricted to only the most urgent of ship passages.

Maintenance and Operation

All are equipped with proper navigation lights and with coding sirens with which to signal vessels in passage. Traffic gates and signals are provided for the direction of vehicular traffic.

Each bridge has a control room from which it is operated. Control systems are so interlocked that for opening it is necessary to set traffic signals, lower traffic gates and open the bridge lock (in sequence) before power can be applied to the leaf operating motors. The cycle is reversed for closing.

An operating engineer, under the general supervision of a chief operating engineer, is in charge of each bridge at all times.

Routine maintenance such as greasing, making minor adjustments, etc., is performed by the operating engineers and watchmen. Minor repairs are made by mechanics whose services are requisitioned from other bureaus or departments. Major maintenance, major repairs and alterations are usually performed by contract under the supervision of the Bureau of Engineering.

Operating engineers, with the usual cooperation of ship captains, endeavor to time openings so as to minimize interference with vehicular traffic.

All bridges are equipped with alarms connected to the fire alarm signal system. Operators are thereby alerted to any probable necessity for an emergency opening for the passage of fire boats.

ISLAIS CREEK BRIDGE

The present Islais Creek Bridge, located at Third and Arthur Streets, is the newest of the three, having been put into operation in February 1950. It carries the greatest volume of traffic, approximately 37,000 vehicles daily, across Islais Creek, the most frequently used channel. During 1953-1954 it was opened 1,504 times to permit the passage of vessels. Openings during 1952-1953 and 1951-1952 were 1,511 and 1,157, respectively. One opening often permits the passage of more than one vessel.

This deck-type, double-leaf bascule bridge accommodates six lanes of vehicular traffic and has two sidewalks for pedestrians. The waterway, between fender piling, has a clear width of 98 feet.

Counterweights and mechanisms are enclosed in waterproof pits below deck level. There is little above the level of the steel grating deck to obstruct vision, other than the main gear quadrant housings.

Maintenance and Operations

The two leaves are each 54 feet long and each is moved by two twenty-horsepower electric motors.

Controls are located in a tower from which the operator has a clear view of the entire bridge and of the street for a considerable distance in each direction. A loud speaker is provided, though seldom used, to permit the operator to talk to motorists and assist or instruct them if necessary.

Watchman's services are not required at this bridge.

Operation was suspended for nineteen days, during October, to permit repairs. Work was accomplished while the bridge was in the closed position. Vehicular traffic was detoured only while counterbalances were being adjusted and while tests were being made.

THIRD STREET BRIDGE

The present Third Street Bridge, located at Third and Channel Streets, was put into operation in 1933. It carries approximately 35,000 vehicles across Mission Creek each day. During 1953-1954 it was opened 796 times to permit the passage of vessels. Openings during 1952-1953 and 1951-1952 were 957 and 789, respectively. One opening often permits the passage of more than one vessel.

This through-type, single-leaf bascule bridge now accommodates five lanes of vehicular traffic, carries a steam railroad track, and has two sidewalks for pedestrians. Sidewalks, on each side, and a traffic lane on one side are carried outside of the main bridge trusses. The waterway, between fender piling, has a clear width of approximately 100 feet.

Counterweights and mechanism are located in the bridge superstructure, which is quite massive.

The leaf is 140 feet long and is moved by two two-hundred horsepower electric motors.

As the location of the operator's room does not afford an unobstructed view, a watchman is kept on duty at all times to assist in directing and safeguarding vehicular traffic. In addition to traffic gates, signals and bells, a siren warns when the bridge is about to be opened.

The only major work performed on this bridge during 1953-1954 was the replacement of the deck. A new steel grating has now replaced the old wooden deck that had become quite a maintenance problem and was always a fire hazard. Work was performed at night so as to minimize traffic interference.

Maintenance and Operation

FOURTH STREET BRIDGE

The Fourth Street Bridge, located at Fourth and Channel Streets, is the oldest of the three, having been put into operation in 1913. It carries the smallest volume of traffic, approximately 6,000 vehicles daily, across Mission Creek. The use of this portion of Mission Creek is declining. This bridge was opened only 306 times for the passage of vessels, mostly painter's barges, during 1953-1954. Openings during 1952-1953 and 1951-1952 were 362 and 406 respectively.

This through-type, single-leaf bascule bridge accommodates four lanes of vehicular traffic and has two sidewalks for pedestrians. The sidewalks are carried outside of the main bridge trusses. The waterway, between fender piling, has a clear width of 75 feet.

The leaf is 90 feet long and is moved by two forty-horsepower electric motors. Counterweights and mechanism are located in the bridge superstructure.

Upon opening the bridge the operator loses control of traffic control devices at the open end. For that reason, and to assist in the direction of traffic, a watchman is kept on duty at all times.

Modernization of traffic control devices, with full control from the operator's tower, is now in progress. This alteration will permit the elimination of watchmen.

A study of openings revealed that this bridge was opened only slightly more often than once each month between the hours of 8:00 P.M. and 4:00 A.M. during the past three years. Arrangements have been made to discontinue operation between those hours, except in emergency.

TUNNEL

The important functions of maintenance and operation of the Broadway Tunnel are ventilating, lighting and cleaning.

VENTILATION

The ventilating system and its operation were described in the report for 1952-1953. The system has continued to operate satisfactorily and no changes have been made.

Maintenance and Operation

Blower operation during the year was as follows:

Blower	S L O W		F A S T	
	Hrs.	Percent	Hrs.	Percent
No. 1 North Bore, Westbound traffic	251.2	2.87	9.3	.10
No. 2 North Bore, Westbound traffic	256.7	2.93	8.5	.10
Total	507.9	5.80	17.8	.20
No. 3 South Bore, Eastbound traffic	24.8	.28	1.2	.014
No. 4 South Bore, Eastbound traffic	22.3	.26	1.3	.015
Total	47.1	.54	2.5	.029

LIGHTING

The Tunnel Lighting System consists of 503 tunnel lighting fixtures, 252 located in the south bore and 251 located in the north bore. The fixtures are mounted on the center lines of the respective bores at the ceiling and are supplied from wires contained in a continuous wireway immediately behind the fixture body and to which the fixture is attached.

Each bore is divided into three sections -- entrance, middle, and exit -- for lighting purposes. The fixtures located in the entrance sections contain two 6-foot 'Slimline' fluorescent lamps rated approximately 26 watts each, plus one 6-foot 'Slimline' fluorescent lamp, rated approximately 56 watts. The fixtures located in the middle sections contain two 6-foot 'Slimline' lamps rated approximately 26 watts each, plus one 6-foot 'Slimline' lamp rated approximately 38 watts. The fixtures located in the exit sections contain two 6-foot 'Slimline' lamps rated approximately 26 watts each.

The two 26 watt lamps in all fixtures will burn continuously 24 hours a day. The additional 56-watt and 38-watt lamps in the entrance and middle sections, respectively, will be automatically illuminated in the morning and extinguished in the evening to provide additional illumination in the entrances during the daylight hours and an easier transition from daylight brightness to the tunnel level of illumination for motorists.

The entire lighting system has been in continuous operation since the tunnel was opened to traffic in December 1952.

Lamps installed under the construction contract were rated for a life of 10,000 hours. Though many lamps had been in service

Maintenance and Operation

for several weeks prior to December 1952, only twenty-five had burned out by the time first replacements were made in September 1953. Before the end of June 1953 it became necessary to replace an additional 332. Replacements are presently being made with lamps rated for a life of 6,000 hours. None of the latter had burned out before the end of June 1953.

A study is being made to determine which is the more economical; cheaper lamps requiring more frequent replacement or the more expensive but longer burning lamps. It has already been learned that both lamps used to date can be expected to far outlive their rated life. A conclusion will depend upon further experience.

The frequency of making replacements is governed more by the distribution than by the number of burned-out lamps. It may be necessary to replace as few as twenty-five, if closely grouped, or, if widely scattered, it may be practical to wait until there are 100 or more.

It is not necessary to close the tunnel to traffic during relamping. A portable scaffold mounted on a low-bed truck provides a safe platform for the workmen and is so constructed that the truck occupies only one of the two traffic lanes. Work is not started until after the heavy morning travel has subsided.

CLEANING

The tunnel roadways are flushed daily and gutters are hand swept once each week. These operations are performed in normal manner by use of street flusher and hand sweeping crews.

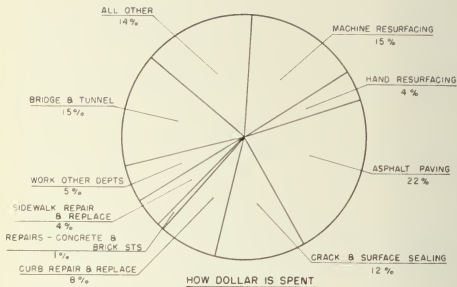
The lower portion of the walls and the sidewalk handrail are washed once each week by use of the street flusher and hand cleaned as necessary. The frequency of hand cleaning varies but will probably be established at once each three months.

A detergent has been found which, when mixed with water and fogged onto the surface, loosens the sooty deposit on the walls and arch so that it will flush off surprisingly clean. The development of proper equipment will allow complete cleaning with very little interference with traffic.

The major portion of the tunnel cleaning is performed by the Bureau of Street Cleaning. A description of frequencies and methods can be found in that Bureau's report.

TRAFFIC

On August 17, 1953, a Monday, 9,361 eastbound and 8,878 westbound vehicles were counted during the 24 hours. A previous count, Wednesday, February 11, 1953, showed 8,668 and 8,760, respectively.



58



185

BUREAU OF
STREET REPAIR

Maintenance and Operation

BUREAU OF STREET CLEANING

S. J. Sullivan, Superintendent

FUNCTION AND OPERATIONS

San Francisco's 1,626 curb miles of paved streets are being kept in a neat and presentable condition by the employees of this Bureau. The downtown shopping center, a world famous tourist attraction, is kept as clean as possible by blockmen who patrol their sections from two to four times daily. In the outlying business and other congested areas the streets are serviced by blockmen. Parts of their route are covered one or more times daily -- other parts of the routes are covered once a week or when ordered cleaned by the District Director. There are now 132 block routes in the City and there is a need for at least three additional block routes in the Western Addition. A request will be made in the next budget to secure funds necessary to establish these three block routes.

Eight Motor Flushers travelled 71,648 curb miles. The function performed by the fleet of Motor Flushers cannot be duplicated by any other method of street cleaning in such an economical manner. These Flushers were not only used for flushing streets, they doubled as tunnel cleaners and were also used to supply water to irrigate the trees on the Van Ness Avenue center islands, and on other streets where there are trees maintained by this Bureau. Flushers, as usual, were dispatched to wrecks and to truck spillages. The fleet of Flushers is equipped for use as auxiliary fire fighters by Civil Defense.

Ten Motor Sweepers serviced 32,407 curb miles of paved streets. The larger type Motor Sweepers are performing a good job in the outlying districts where the curb lines are not congested by parked cars. Motor Sweepers also performed the usual cleaning of 82 miles of curb along center islands. This is a function that cannot be performed economically or safely by any other means. Owing to the fact that sufficient cleaning service is not being received in some sections of the City due to limited forces, a request was made for additional Motor Sweepers in the last budget. Though recommended by the Mayor and Chief Administrative Officer the item was not approved by the Board of Supervisors. The request for an additional Motor Sweeper will appear in the next budget with stronger supporting data, showing the need for the additional equipment.

Some sections of the City are not covered by blockmen or Motor Sweepers. These areas are serviced by ten Gang sweeping crews each consisting generally of four to six laborers, one chauffeur and two lumpers supervised by a working Sub-Foreman. The amount of coverage needed is judged by the condition of the

Maintenance and Operation

streets, density of population, etc. It can be readily seen that a first-class residential district will not produce as much litter as the congested areas and industrial sections. In the southeast section of the City the street sweeping schedule is not of such frequency as the district requires. This area is swept by a Gang crew on an average of once in 19 days which is not sufficient to keep the streets as clean as they should be.

Three utility trucks handled all miscellaneous jobs such as special weeding projects on City property and center islands. The new 38-inch sickle bar was used for the first time during the month of June 1954 and is doing a better job than expected, proving to be an excellent time saver. Utility crews performed the necessary cleanup after wrecks, oil spillage and truck spillage.

One of the principal duties of the utility crews is the cleaning of tunnels. The cleaning of Broadway Tunnel has developed into a weekly project in order to keep the tunnel's glazed tile shining and the sidewalks clean. The unglazed tile in the crown of the Broadway Tunnel is cleaned by using a flusher which has been specially equipped by the Bureau equipment man and Shop No. 2 of the City Purchaser's Office. This unit is in the experimental stage in its use to spray a chemical detergent onto the unglazed tile. On the first cleaning of the crown with this equipment the results were all that could be expected considering the fact that it had not been washed for eighteen months. It is recommended that this tile be cleaned two or more times a year. Cleaning the entire tunnel, both bores, can be accomplished in two days. Traffic is detoured during the crown semi-annual cleaning but there is no stoppage of traffic during the weekly cleanup of the lower sections.

The prevailing westerly winds, which make San Francisco cool when other sections of the State or Nation are sweltering in summer heat, are the cause of extra work for this Bureau since they collect paper and dirt in pockets throughout the City. The 10 litter patrol trucks and crews are constantly kept busy cleaning these pockets, and picking up cartons, truck spillage and the like. This refuse is, on the most part, left by careless tradesmen, news vendors and others who have no respect for the community.

The inauguration of the use of two-way radios in five vehicles in March, 1954, has improved the direction of activities in the field and has proved so valuable that a request for another unit in a litter patrol truck will be made in the next budget.

The four District Directors performed a good piece of work in an attempt to control garbage dumping in the parks, streets and lots of the City. The employees of this Bureau are presumed

Maintenance and Operation

to be operating personnel, not enforcing personnel, but found it advantageous to do a little enforcing work in regard to violations of the Health Code and Police Code. As a result, there was a total of 681 persons apprehended. Of these 561 were warned to cease violating the laws; 101 were cited to appear before the District Attorney and show cause why a warrant should not be issued; 20 warrants were issued resulting in 19 persons being fined a total of \$860.00, and one received a 5 day jail sentence.

Since this enforcing work hinders proper supervising of personnel, budget requests have been made to obtain an assigned police officer. However, to date this request has been refused.

PERSONNEL

The supervising staff of Superintendent and four District Directors controls the operation of 327 employees. A budget request for a much needed Assistant Superintendent to improve supervision was deleted from the 1954-1955 budget. The District Directors for the Bureau are: A. F. Schuler (on sick leave for entire year); L. V. Esterday; T. F. Brown; P. A. Peterson; and V. Nigro. Other classifications are:

1 - Clerk-Stenographer	263 - Laborers
1 - Gardener	12 - Labor Sub-Foremen
1 - Hired Truck Driver	49 - Chauffeurs

On May 27, 1954 the first annual retirement banquet was held for all employees retiring during the fiscal year. Two hundred and twenty employees of the Bureau attended this very successful banquet in honor of their 15 retiring fellow workers, whose names and period of service follows:

Arthur Miller	41 Yrs. 5 Mos.	Lodovic Avanzino	11 Yrs. 7 Mos.
Charles Hayward	15 Yrs. 11 Mos.	Carl Piastri	7 Yrs. 5 Mos.
John Rogina	15 Yrs. 11 Mos.	Elia Del Grande	5 Yrs. 11 Mos.
John Develekos	15 Yrs. 6 Mos.	Frank DeAngelis	5 Yrs. 8 Mos.
John Connelly	12 Yrs. 5 Mos.	Antonio Garberoglio	4 Yrs. 8 Mos.
Peter Urbani	12 Yrs. 2 Mos.	Battista Pasqualone	2 Yrs. 5 Mos.
James Corbett	11 Yrs. 10 Mos.	Floyd Meisky	1 Yr. 11 Mos.
Carlo Borroni	1 Yr. 3 Mos.		

This innovation departs from the past practice of having several banquets for a few individuals with none for the majority.

Maintenance and Operation

PREVENTIVE STREET CLEANING

Many sections of the world are plagued by pests of various species: Egypt was visited by the scourge of the locust; the State of Utah was plagued with grasshoppers. San Francisco has not only been visited by unwanted pests, they have continued to stay here for over twenty-five years. These are, of course, San Francisco's famous Litterbugs without whom the City would be one of the cleanest Cities in the world. It has been a losing battle against the Litterbug and will continue to be until such time as all civic groups wake up to the fact that they have an obligation to assist this Bureau in its aim to make San Francisco a cleaner and more beautiful City.

It is a pleasure to report that the San Francisco Chamber of Commerce has agreed to form a Citizens' group under the leadership of Mr. Leonard S. Mosias who heads the Streets, Highways and Bridge Sections of the San Francisco Chamber of Commerce. The 'Don't be a Litterbug' Committee will be composed of members of Garden, Luncheon, Automobile and Women's Clubs, Parent-Teacher Associations, Youth groups merchants, manufacturers, service operators and others. This civic minded group will endeavor to bring home to all citizens the thought that they are a part of the team that is going to make San Francisco the cleanest City in the United States.

The Bureau of Street Cleaning is of the hopeful opinion that the new Committee will secure the cooperation of its principal sources of litter, the retail stores and the newspapers.

The San Francisco School Department is to be thanked for the help it is giving to eliminate Litterbugs and make future citizens realize that a clean road is more likely to be a safe road, and that it is certainly more pleasing to travel along a street, road, or park that is not littered with paper, cans, cartons and other trash.

As a part of the School Department's course in driver education one unit includes instruction in the general appreciation of cleanliness of streets, highways, parks and country side. This unit also points out the hazard of fire caused by broken bottles and paper in open countryside areas; possibility of disease to man and animals; danger of traffic accidents from broken glass; and a review of state and local ordinances regarding illegal disposal of refuse.

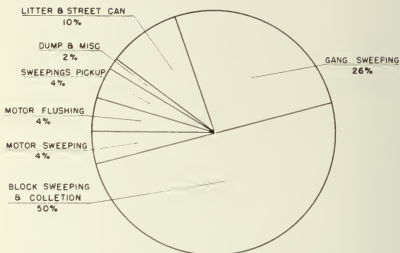
Maintenance and Operation



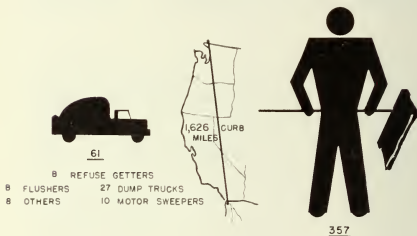
BROADWAY TUNNEL
Cleaning Crown Tile



BROADWAY TUNNEL
Cleaning Tile at Lower Level



HOW DOLLAR IS SPENT



BUREAU OF STREET CLEANING

Maintenance and Operation

BUREAU OF BUILDING REPAIR

Harry H. Hanssen, Superintendent

FUNCTIONS

The Bureau of Building Repair furnishes labor and materials for maintenance and alterations of City-owned buildings that are under control of the Director of Public Works. Similar services are performed for the Board of Education and other municipal departments under a work order procedure.

On July 1, 1953 the Bureau of Building Repair was given the responsibility of the maintenance and repair of 233 additional buildings and grounds. The Bureau of Building Repair now provides for maintenance and repair of public buildings totalling 302 of major size and a large number of various small type structures at the different activities.

In addition to maintenance and alteration work, this bureau furnishes operating personnel for the City Hall, Hall of Justice, Health Center Buildings, Emergency Hospitals, Police Stations and Fire Houses, and is also responsible for the operation of the Civic Center Power House which furnishes heat to the Civic Auditorium, Public Library, Health Center Buildings and City Hall.

PERSONNEL

Personnel employments include one superintendent, two assistant superintendents, seven general foremen and eleven foremen supervising 190 to 200 mechanics, supplemented by additional seasonal workers representing 13 building crafts, employed in repair and alterations, and 130 employed in operational work.

Repairs and Alterations

1 Superintendent	57 Painters
2 Assistant Superintendents	18 Cement Finishers
7 General Foremen	25 Carpenters
11 Foremen	9 Locksmiths
26 Plumbers	5 Glaziers
16 Steamfitters	3 Plasterers
15 Sheet Metal Workers	1 Tile Setter
22 Electricians	2 Laborers
3 Armature Winders	

Additional Seasonal Workers as Required

Maintenance and Operation

Operational

2 Chief Operating Engineers	3 Sub-Foremen Janitors
9 Operating Engineers	74 Janitors
7 Junior Operating Engineers	2 Janitresses
16 Elevator Operators	7 Window Cleaners
1 Supervisor of Janitors	1 Sub-Foreman Window Cleaner
3 Foremen Janitors	5 Watchmen

Organization

PLUMBING DIVISION: 26 Men 1 General Foreman

There are from eight to eleven men on regular assignments to the City Hall, San Francisco Hospital, Laguna Honda Home, Hall of Justice, County Jail No. 2, and the Fire and Police Departments. At times additional men are assigned to take care of emergency calls. Miscellaneous repairs to plumbing facilities in school buildings require from six to eight men. Interdepartmental work orders for repairs and new installations of plumbing facilities require employment of from six to eight men. Two panel-body and two utility trucks are assigned for use by this division.

STEAM DIVISION: 16 Men 1 General Foreman

This division takes care of gas and fuel-fired steam boilers, steam lines, traps, radiators and vacuum equipment and all accessories connected with heating systems. It also supervises the bricking of boilers in the school department during the summer vacation period.

One man each is assigned to the City Hall, Hall of Justice, San Francisco Hospital and Laguna Honda Home, and additional men are assigned as necessary for emergency calls. Miscellaneous repairs in school buildings normally require the services of two men with extra assignments for emergency calls. Interdepartmental work orders issued by the Municipal Railway, Fire, Health, Public Welfare, Real Estate and School Departments, Sheriff and Director of Public Works keep ten men employed. One utility service truck is assigned for use by this division.

SHEET METAL DIVISION: 15 Men 1 General Foreman

The work of this division includes the making of repairs to cornices, ventilating systems, tile roofs, metal doors and the construction of guards for machinery in school buildings according to recommendations of the State of California Safety Division. The fabrication of street cans, buggy pans and scoops for the Bureau of Street Cleaning is also accomplished. The division has the use of two ½-ton service trucks.

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Maintenance and Operation

SUMMARY OF TRAFFIC PAINTING

3 Inch Center Line	54.35 Miles
4 Inch Line	299.21 Miles
12 Inch Line	881,937 Feet
12 Inch Line (Stop Bar)	9,035 Feet
9 Inch Line	40,133 Feet
Pavement Bar	4,226 Feet
Arrows	739 Each
4 Foot Cross (Metered Parking)	7,164 Each
Diagonal Lines (Metered Parking)	3,477 Each
Words	1,026 Each

CEMENT WORK DIVISION: 22 Men 1 General Foreman

This division takes care of requests from all other divisions in the Bureau for such work as opening up ground for broken water pipes or choked sewers; drilling for electric conduits; and replacing walks and yards which have been opened. Three plasterers and a tile setter are normally required to follow up on jobs of other building crafts. Two men and one pickup truck are assigned for maintenance and repair of street signs. The equipment in use includes one 2-ton dump truck, one ½-ton pickup truck, five ¾-ton pickup trucks, four 60 C.F.M. portable compressors and one 1-yard concrete mixer driven by gasoline motor.

CARPENTRY DIVISION: 25 Men 1 General Foreman
2 Foremen

There are from five to six men assigned to the Hall of Justice, City Hall, San Francisco Hospital and Fire Department for general repairs to these buildings. Six men are assigned to work on miscellaneous school requisitions taking care of various minor jobs of all descriptions. Eighteen men work on interdepartmental work orders received from City Departments and Commissions, making alterations and repairs. Three ½-ton and one ¾-ton trucks are assigned for use by this division.

LOCKSMITH DIVISION: 9 Men 1 Foreman

One man is assigned to the City Hall, Hall of Justice, and the Fire and Police Departments and he is in charge of the Locksmith's shop and men. One man is assigned to work on miscellaneous school requisitions. Five men are on interdepartmental work orders issued by all other departments and commissions. The locksmith's work consists of master-keying public buildings, making keys, opening locks, installing and repairing locks and panic bars. The Recreation and School Departments' lock problems are very serious, as master keys are often lost or stolen and vandals are continually tampering with the locks. A service-equipped sedan and one ½-ton

Maintenance and Operation

panel delivery truck and a 3/4-ton shop on wheels are used by this division.

A 3/4-ton walk-in truck, purchased this year, is now in operation for the lockshop. It is a complete portable traveling shop fully equipped with all accessories such as work bench, key cabinets, tool cabinets, parts cabinets and drawers, it also has a regular size key duplicating machine which can handle almost any type key, a grinder and wire buffing wheel, and a large vise which will handle almost any type of object or material. These three units are permanent fixtures in the truck. In addition, it is equipped with small tools and portable electric tools such as drills, soldering irons, etc.

To handle this equipment, the truck has a 1,000 watt A.C. power unit that is operated by a portable gas engine. This unit is installed so that it can be taken out of the truck for power and repairs.

The truck is also equipped with a double throw switch so outside power can be used and a 40 foot self-winding extension cord which is used to bring power in and take power out when a long cord is needed. The switch for this operation is fused so no short or overload will harm any equipment.

It may be noted that this truck was engineered and developed by the lockshop personnel and the equipment was installed by our own mechanics in the Department of Public Works.

GLAZING DIVISION:

5 Men

1 Foreman

This division replaces glass in all public-owned buildings. Vandalism at the recreation centers and school buildings has been on the increase and at times the division has been unable to immediately cope with the replacing of all broken windows. Two service-equipped trucks are used by this division.

Maintenance and Operation

MAINTENANCE AND REPAIR OF PUBLIC BUILDINGS AND GROUNDS

EXPENDITURES

Department	Budget Work	Interdepartmental Work	Total
Art Commission	--	\$ 372.15	\$ 372.15
California Palace of Legion of Honor	--	4,068.21	4,068.21
de Young Memorial Museum	--	897.18	897.18
Disaster Council and Corps	--	946.20	946.20
Electricity	\$ 1,793.97	121.80	1,915.77
Fire Department	38,780.82	4,107.05	42,887.87
Health	310,180.09	4,397.86	314,577.95
Police	17,769.78	1,772.31	19,542.09
Public Libraries	28,982.82	1,280.04	30,262.86
Public Utilities	--	15,266.93	15,266.93
Public Welfare	7,293.65	2,543.33	9,836.98
Public Works	209,145.28	14,433.68	223,578.96
Purchaser	9,325.98	2,573.65	11,899.63
Real Estate	11,082.13	--	11,082.13
Recreation and Parks	--	6,524.63	6,524.63
Retirement System	374.42	--	374.42
Sheriff	27,547.77	26.27	27,574.04
Schools	--	783,789.23	783,789.23
War Memorial	--	11,712.33	11,712.33
Youth Guidance Center	15,057.57	696.13	15,753.70
Totals	\$676,327.52	\$855,508.61	\$1,531,836.13

Maintenance and Operation

STATISTICAL DATA

Operations for the year entailed the following expenditures:

Superintendence and Building	
Operations	\$480,706.85
Yards and Shops	26,671.71
Carfare, towel service, etc.	7,492.27
Emergency Leaves	8,160.04
Vacations	10,566.44
Fuel Oil	32,475.99
Automotive Repair	5,398.33
Gasoline	3,873.66
Doctors Services	1,266.00
Scavenger Services	2,649.72
Heat, Light and Power	5,045.01
Window Washing	1,023.02
Monuments and Statues	26.08
Services of Other Departments	3,940.40
	\$ 589,895.52

Maintenance and repair of General Government Buildings performed with funds allotted to the Bureau consisted of:

Fire Stations	\$ 21,216.96
Police	4,825.24
County Jails	4,530.57
City Hall	56,344.52
Hall of Justice	25,910.33
San Francisco Hospital	66,101.12
Laguna Honda Home	18,872.80
Sewage and Waste Treatment Plants	21,452.48
Miscellaneous Structures	2,179.58
Equipment Purchase	27,837.27

250,271.87

Repair and Maintenance of Public Buildings:

38.213.00	City Hall-Hall of Justice)	\$ 98,364.36
38.213.07	(Sheriff)	23,017.20
38.213.09	(Police)	12,943.48
38.213.10	(Fire)	17,563.86
38.213.14	(Library)	28,989.82
38.213.24	(Youth Guidance Center)	15,057.57
38.213.33	(Purchaser)	8,325.98
38.213.35	(Auditorium)	11,688.13
38.213.+3.2	(Sewage Pumping Stations)	3,894.71

Maintenance and Operation

38.213.49	(Department of Electricity)	\$ 1,793.87
38.213.50.1	(Health - Central Office)	9,470.36
38.213.51	(Laguna Honda Home)	45,556.71
38.213.53	(San Francisco Hospital)	161,039.62
38.213.54	(Emergency Hospitals)	5,026.63
38.213.55	(Hassler Health Home)	6,093.54
38.213.56	(Public Welfare)	7,293.66
38.213.59-50	(Farmer's Market)	294.44
38.213.932	(Retirement System)	374.42

\$ 454,787.66

Traffic Striping Expenditures:

Wages	132,676.18
Material and Supplies	50,150.55
Contractual Services	3,687.21

186,513.94

Work Order Performance appeared in three general divisions:

Schools	783,789.23
Gas Tax Fund	48,935.35
Various	356,414.30

1,189,138.88

\$2,670,607.87

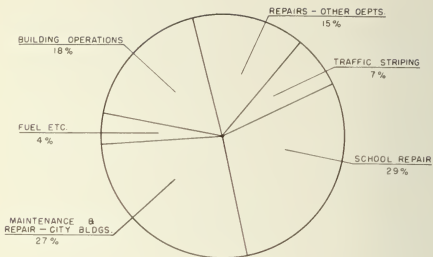
BUREAU OF ACCOUNTS

INTERDEPARTMENTAL

Schools	\$ 783,789.23
School Bond Fund	25,378.13
Sewer Bonds	2,984.86
Fire House Bonds	1,427.25
Sheriff	26.27
Police	1,770.31
Fire	3,407.05
Recreation and Park	6,524.63
Public Library	1,280.04
Youth Guidance Center	696.19
Purchaser	2,573.65
Engineering	14,433.68

Maintenance and Operation

Health Department	\$ 4,392.88
Public Welfare	2,549.88
State Highways	2,906.01
Public Utilities (Airport, Municipal Railway, Water Department)	15,966.93
Public Buildings Improvements	239,880.05
Miscellaneous	30,216.49
	\$1,140,203.53
Gas Tax Fund (44-45-46-47-48)	48,935.35
	\$1,189,138.88



HOW DOLLAR IS SPENT



39



320

BUREAU OF
BUILDING REPAIR

CENTRAL PERMIT BUREAU

S. J. Rosenblum - Supervisor

FUNCTIONS

The Central Permit Bureau was established in 1932 pursuant to Ordinance 9132 New Series, Board of Supervisors, now incorporated in Chapter X, Article I, of the Public Works Code. This bureau was organized principally for the reception and recordation of applications and the processing of same in accordance with the above ordinance, and for the issuance of permits predicated upon the above stated applications; also the handling of all clerical work and details in connection with the above functions.

Furthermore, the supervisory head of the Central Permit Bureau, in his capacity as Cashier of the Department of Public Works, handles all receipts of the department and deposits same with the City and County Treasurer, in consonance with Section 82 of the Charter. An itemized detail of said receipts and deposits are summarized as an addenda in this report.

An additional function of the Supervisor of the bureau is to handle all claims for damages to City property under the jurisdiction of this department, and to render bills for same and follow up collections therefor; also bill and collect all claims for excess costs incurred for the installation of side sewers, the physical work being performed by the Bureau of Sewer Repair.

Statistics compiled by the senior clerk (acting as Statistician of the office) show that the activities of the Fiscal Year 1953-1954 remained practically stable with those of the previous year, 1952-1953.

The personnel of the Central Permit Bureau, as of June 30, 1954, was as follows:

- 1 Supervisor
- 1 Cashier (Electrical Division)
- 2 Senior Clerks
- 1 General Clerk (Position Unfilled)
- 1 General Clerk-Stenographer
- 5 General Clerk-Typists

COMPARATIVE STATEMENT OF PERMITS ISSUED

	1953-1954	1952-1953	1951-1952
Buildings	8,464	8,267	7,292
Billboards	274	227	196
Boiler Installations	211	202	169
Boiler Inspections	1,531	971	1,361
House Moving	17	69	126
Demolitions	142	85	125
Flue Registrations	34	34	36
Flue Permits - New Buildings	28	39	33
Flue Permits - Old Buildings	126	104	90
Flue Coupon Books - New Buildings	41	52	37
Flue Coupon Books - Old Buildings	26	25	27
Construct Sidewalks	15	16	18
Street Space	900	869	837
Excavations	761	809	678
Side Sewers	579	664	655
Excess Cost - Side Sewers	167	192	268
Sidewalk Flower Markets	44	44	41
Blasting	3	7	10
Advertising	23	25	23
House Number Certificates	822	878	793
Payments for Surveys	24	29	32
Payments for Engineering Inspection	47	65	64
Payments for Street Improvement Bonds	79	68	66
Public Utilities Street Openings	8,787	12,323	10,333
Posting Notices	745	737	674
Deposit on Plans	1,873	1,684	1,575
TOTAL NUMBER OF PERMITS ISSUED	25,763	28,475	25,559

Central Permit Bureau

CASHIER'S REPORT

Source of Receipt

Street Space Permit Deposits	\$ 18,930.00
Sub-Sidewalk Permit Deposits	-
House Moving Permit Deposits	-
Deposits on Plans	58,645.00
Side Sewer Permit Deposits	138,575.00
Excavation Permits	
Special Deposits	\$ 1,203.40
Excavation (Special Deposits)	134.50
(Public Utility Corporations)	17,323.50
(Lowering Curbs, etc.)	2,469.00
	21,130.40
Building Permits	\$184,160.80
Billboard Permits	1,040.00
Demolition Permits	1,530.00
Boiler Installations	710.00
Boiler Inspections	6,636.50
Use of Street Space	28,806.86
House Number Certificates	2,963.00
House Moving Permits	340.00
Flue Registrations	680.00
Flues - New Buildings	14.00
Flues - Old Buildings	252.00
Flues - New Buiddings (Coupons)	512.50
Flues - Old Buildings (Coupons)	520.00
Posting Notices	2,002.75
	230,168.41
Fees - Sidewalk Flower Markets	1,536.00
Side Sewers - Excess Costs	4,843.41
Advertising Charges	2,978.55
Payments on Street Improvement Bonds	
Payments on Street Improvement Bonds (Ord. of 1934)	8,412.10
Fees for Surveys	6,775.00
Fees for Inspections	12,815.00
Misc. (See Monthly Reports for itemized detail)	6,354,941.57
Total Receipts	\$6,859,750.44

Note: 15 Sidewalk Permits issued.
No fees charged.

DEPOSITS WITH CITY & COUNTY TREASURER
CLASSIFIED BY FUNDS

General Fund		
Street Space and Sub-Sidewalk		\$ 18,930.00
House Moving		
Side Sewer Deposits		138,575.00
Deposits on Plans		58,645.00
Surveys	\$ 6,775.00	
Inspections	12,815.00	19,590.00
Excavations		
Deposits	1,203.40	
Fees	19,927.00	21,130.40
Advertising		2,978.55
Street Improvement Fund		-
Street Improvement Fund (Ord. of 1934)		8,412.10
Excess Costs - Side Sewers		4,843.41
Fees		
Building Permits	184,160.80	
Billboards	1,040.00	
Demolitions	1,530.00	
Street Space	28,806.86	
House Numbers	2,963.00	
House Moving	340.00	
Boiler Installations	710.00	
Boiler Inspections	6,636.50	
Flue Registrations	680.00	
Flues - New Buildings	14.00	
Flues - Old Buildings	252.00	
Flues--New Buildings (Coupons)	512.50	
Flues--Old Buildings (Coupons)	520.00	
Posting Notices	2,002.75	
Sidewalk Flower Markets	1,536.00	231,704.41
Miscellaneous Funds		
General Fund	57,333.07	
Special Road Improvement Fund	2,601,841.13	
State Highway Trust Fund	14,797.81	
Special Gas Tax - Street		
Improvement Fund	3,673,626.31	
1948 School Bond Fund	4,817.85	
1947 Street Improvement Bond		
Fund	1,650.00	
San Francisco Unified School		
District	875.40	6,354,941.57
TOTAL DEPOSITS WITH CITY & COUNTY TREASURER		\$6,859,750.44

CLASSIFICATION OF BUILDING PERMITS ISSUED

Class or Type	No. of Permits	Estimated Cost	Fees
1-A	6	\$ 8,826,463	
1-B	21	15,280,117	
2	--	---	
3	38	2,352,840	
4	22	463,000	
5	1,117	20,244,074	
Alterations	7,397	15,303,771	
Totals	8,601	\$ 62,470,265	\$ 184,160.80
Billboards	273	102,142	1,040.00
Totals	8,874	\$ 62,572,407	\$ 185,200.80

(Total number of Building Applications received -- 9,603)

FLUE REGISTRATIONS AND PERMITS

Flue Registrations	34	\$ 680.00
*Coupon Books - New Bldgs.	41	512.50
**Coupon Books - Old Bldgs.	26	520.00
Flue Permits - New Bldgs.	28	14.00
Flue Permits - Old Bldgs.	126	252.00
Totals	255	\$ 1,978.50

MISCELLANEOUS PERMITS

To raze structures	142	\$ 1,530.00
To move Buildings	17	340.00
Boiler Installations	211	710.00
Boiler Inspections	1,531	6,636.50
Posting Notices	745	2,002.75
Totals	2,646	\$ 11,219.25
Grand Totals	11,775	\$ 198,398.55

*New Coupon Books contain
25 Prepaid Coupons

**Old Coupon Books contain
10 Prepaid Coupons

REFUNDS MADE FROM SPECIAL AND TRUST FUNDS

	1953-1954		1952-1953		1951-1952	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
Special Permit Fund						
(St. Space and Sub-Sidewalks)	579	\$ 23,310.00	557	\$ 22,270.00	589	\$ 24,300.00
House Moving Fund	-	-	-	-	2	200.00
Excavations	49	1,547.40	68	1,645.30	66	2,156.50
Side Sewers:						
Refunds to Depositors	576	34,245.51	561	29,984.62	711	28,799.07
Installation Costs credited to						
General Fund		103,854.49		99,275.38		118,040.93
Deposits on Plans	1,692	56,420.00	1,728	44,765.00	1,476	42,475.00
Street Improvement Bonds	-	-	-	-	-	-

REPORT OF HOUSE NUMBERING ACTIVITIES

	1953-1954		1952-1953		1951-1952	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
House Numbers Issued:						
Private Construction		1,570		1,550		1,390
Investigations made and Complaints						
Adjusted		1,200		1,200		1,100
Changes in House Numbering Ordered		111		123		140
Inquiries from Banks, Title Insurance						
Companies, General Public, etc., answered		3,000		3,000		3,000
ADDITIONAL NON-REVENUE ACTIVITIES						
Inquiries pertaining to Age and Class of						
Buildings, and other information						
requiring reference to old applica-						
tions on file		12,000		12,500		10,000
Plans brought from the basement for						
reference purposes and photostating		2,000		1,850		1,700

Central Permit Bureau

ELECTRICAL INSPECTION REVENUE

Month	Electrical Inspection	Sign Inspection	Electrical Sales Permits	Plant Owners' Registration	GRAND TOTAL
1953					
July	\$ 6,363.90	\$ 568.00	\$ 4,940.00		\$11,871.90
August	6,733.65	607.80	948.00		8,289.45
September	5,723.80	440.40	544.00		6,708.20
October	6,390.55	672.75	751.00		7,814.30
November	6,173.05	1,003.80	547.50		7,724.35
December	7,987.80	687.00	552.50	\$ 100.00	9,327.30
1954					
January	8,434.75	557.25	590.00	662.50	10,244.50
February	8,964.45	632.25	420.00	25.00	10,041.70
March	10,045.40	665.80	150.00		10,861.20
April	10,643.15	1,216.65	20.00		11,879.80
May	10,282.50	562.75	12.50		10,857.75
June	7,345.40	781.40			8,126.80
	\$95,088.40	\$ 8,395.85	\$ 9,475.50	\$ 787.50	\$113,747.25

PLANS BROUGHT FROM THE BUREAU FOR
REVISION PURPOSES AND PHOTOGRAPHY
TAKEN ON FILE
PLANS BROUGHT FROM THE BUREAU FOR
REVISION PURPOSES AND PHOTOGRAPHY
TAKEN ON FILE

\$2,000
\$1,850
\$1,700
\$1,550
\$1,400
\$1,250
\$1,100
\$950
\$800
\$650
\$500
\$350
\$200
\$50
\$0

BUREAU OF ACCOUNTS

J. J. McCloskey, Chief Clerk

The Bureau of Accounts controls the budgetary and financial activities of the Department. It is the point of origin of documents dealing with the disbursement of funds and channels them through required procedure until final liquidation.

The Bureau has a central office at the City Hall and a division handling operating accounts at the Maintenance Yard where the greater part of the staff is employed. The latter division is located at the new Maintenance Yard at Army and DeHaro Streets, where it is housed with the operating bureaus of the Department.

PERSONNEL

The permanent staff of 35 employees consists of:

- 1 - Chief Clerk in charge of the Bureau
- 2 - Head Clerks
- 5 - Bookkeepers
- 3 - Senior Clerks
- 14 - General Clerks
- 5 - General Clerk Stenographers
- 3 - General Clerk-Typists
- 2 - Telephone Operators

In addition to the above employees, a Storekeeper is assigned by the Purchaser of Supplies to perform the duties in connection with the operation of the sub-storeroom and materials yard.

The permanent staff of the Bureau was increased during the year by the addition of two employees:

One General Clerk was added primarily to act in the capacity of control station operator of the Department's mobile radio system which began operation on March 1, 1954. The position of control point operation is mandatory according to the Federal Communications Commission. The radio system includes 29 mobile radios in passenger vehicles and trucks of the Department in addition to the Control Station. During the first four months of operation, an average of 40 calls were handled each day. In addition to the radio activities, this clerk handled routine clerical duties of the Bureau.

One General Clerk-Stenographer was added to perform clerical services due to the increased maintenance and repair work load in the Bureau of Building Repair, and to relieve supervisory personnel from considerable clerical duties thereby allowing more time for adequate supervision in connection with the maintenance and repairs of Public Buildings.

FUNCTIONS AND ORGANIZATION

The operating functions of the Bureau embrace control of payroll procedure, personnel records and field time-keeping; purchase order requisitions; sub-storeroom and inventories; automotive expenditures and gasoline and tire records; work order job costs and invoicing; side sewer job and refunds accounts; State gas tax subventions; the cash revolving fund for the Department; the stores revolving fund; budget preparation and control; operation of the Yard telephone exchange; and the supplying of clerical service to all of the operating bureaus.

Included in the general functions of the Bureau are three well defined sub-divisions: Payrolls and Personnel with two Senior Clerks and five assistants; Purchasing and Stores with a Senior Clerk and two assistants; Gas Tax subventions and Bond Funds with a Head Clerk and three assistants.

Three field timekeepers check outside operations for payroll verification and also act as paymasters on semi-monthly pay days, delivering pay warrants to employees on the job.

OPERATIONS

Reports to the Director on operations of the Building Repair, Sewer Repair, Street Repair and Street Cleaning Bureaus are prepared monthly by the Bureau of Accounts from the records maintained in the Bureau.

Job costs pertaining to damages to City property under the jurisdiction of the Department are compiled and forwarded to responsible parties for collection. These costs amounted to \$13,475.95 for the fiscal year and embraced 181 cases, covering damages to bridges, automotive equipment, street structures, traffic signals, street signs, traffic devices and prisoner damage to police stations. The Bureau handled the fiscal processing of contracts under bond issues for Street Improvements, Sewers, Sewage Treatment Plants, Schools, and Fire Houses under programs which are expected to continue into subsequent years.

In the supplying of materials for the varied activities of the Department, a sub-storeroom and a material yard are conducted, through which 15,232 transactions were handled involving the delivery of 45,696 items to jobs. Outside purchases from vendors brought about the issuance of 6,981 requisitions and 5,332 delivery orders.

Bureau of Accounts

The Stores Revolving Fund under the control of the Bureau is designed to permit the purchase in advance of constantly used materials. Plumbing supplies, electrical items, paints, hardware, lumber, glass, tools, sewer pipe, brick, cement, castings and miscellaneous needs which can be foreseen, are carried in Stores and charged out to the various jobs as needed. Controls have been established which facilitate monthly reimbursements for goods withdrawn, and Stores records are maintained on a perpetual inventory basis subject to annual physical check.

The Department Cash Revolving Fund of \$1,500.00 is used by the Bureau for payment of small bills and transportation charges, and enables workmen on field work to make cash purchases at neighborhood stores thus avoiding trips to downtown establishments. All transactions are conducted under controls set up by Ordinance.

Detailed records of all expenditures are maintained, particularly on jobs performed under work order procedure. In these, the Charter requires that all elements of indirect and supervisory costs be considered and made part of the final job cost. To accomplish this, indirect labor is pro-rated monthly on an exact percentage basis, as are overhead charges for accident compensation, sick leave, vacation, retirement, equipment replacement and miscellaneous. These items of overhead are accumulated in reserves to meet the requirements designated. Charges for small tools and shop supplies used in work order operations are made against the miscellaneous reserve.

SUMMARY OF TRANSACTIONS

Budgeted Funds, Subject to control and appropriated to:	
Bureau of Accounts	\$ 105,144.00
Bureau of Architecture	241,626.56
Bureau of Building Inspection	344,243.43
Bureau of Building Repair	1,523,737.91
Central Permit Bureau	44,059.31
Bureau of Engineering	616,467.00
Sewage Disposal Plant	817,597.00
General Office	824,057.20
Bureau of Sewer Repair	754,479.28
Sewage Pumping Stations	81,344.54
Bureau of Street Repair	1,537,946.51
Bureau of Street Cleaning	1,659,352.00
Bridges - Tunnels	187,845.00
Gas Tax (Special Road Improvement)	799,440.00
Special Gas Tax - Street Improvement Fund	4,911,500.00
Gas Tax - Street Construction	1,127,500.00

Total Budgeted Funds \$15,576,339.74

Interdepartmental service, under work order procedure for:

Schools	\$ 1,452,608.80
Health	314,968.81
Recreation - Park	7,478.86
Library	166,675.19
Public Buildings Improvements	245,927.11
Gas Tax Accounts	1,696,015.21
Engineering	17,181.95
Sewage Plants	17,680.89
Public Utilities	29,355.90
General Office	160,367.01
Sewer Bonds	135,753.08
Street Bonds	746,343.45
Sewage Treatment Bonds	148,438.36
Public Welfare	2,838.94
Fire Department	30,821.66
Special Inspection	5,253.32
Juvenile Court Bonds	333.60
State Highway Cleaning	57,556.11
Miscellaneous	342,806.71
Paving Side Sewers	25,079.87
School Bonds	240,032.18
Fire House Bonds	36,573.99

Total Interdepartmental Service \$ 5,880,091.00

Side Sewers Deposits, for installation
and repair, covering 574 permit
deposits for 670 house connections

137,700.00

GRAND TOTAL \$ 21,594,130.74

Table 1

1.	10
2.	10
3.	10
4.	10
5.	10
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on page 22

Table 2

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10

BUREAU OF ENGINEERING
CURRENT CONTRACT DATA SUMMARY
Showing All Contract Work Awarded Or Under Way
July 1, 1953 to June 30, 1954

Table	Type of Construction	No.	Contracts Awarded Aggregate Value	Amount Expended Fiscal Year 1953-1954
A	Major Thoroughfares	3	\$ 210,434.10	\$ 727,043.52
B-1	Streets - Private Contracts	16	179,000.00	248,855.00
B-2	Streets - Assessment Proceedings	15	126,987.60	156,658.95
B-3	Streets - Public Contract City Pay	17	332,869.11	266,325.79
B-4	Streets - Car Track Removal	10	1,509,974.01	1,478,916.96
C	Traffic Signals & Channelization	9	242,966.50	515,914.92
D-1	Sewers - Pipe, Vitrified Clay & Concrete	10	540,494.30	557,765.77
D-2	Sewers - Concrete Monolithic	1	37,885.00	1,305,317.34
E	Miscellaneous	33	695,160.07	363,302.63
TOTALS		114	\$3,875,770.69	\$5,620,100.88

TABLES

On the following pages appear separate tables of current contracts for each of the types of Construction listed above. The source of the funds used to finance each project is indicated in the tables according to the following:

A b b r e v i a t i o n L e g e n d

Designation	Description of Fund
General	General Fund City and County
Spec. Rd.	Special Road Improvement Fund
Major Sts.	Special Gas Tax Improvement Fund
State Hwy.	State Highway Fund
Assmt.	Assessed to property benefiting under the Street Improvement Ordinance of 1934
Pd. Prop. Owners	Costs borne by Property Owners under private contract
1944 Sewer Bonds	Bond Issue voted by citizens on November 7, 1944 - \$12,000,000
1947 St. Imp. Bonds	Bond Issue voted by citizens on November 4, 1947 - \$22,850,000
1948 Sewage Tr. Bonds	Bond Issue voted by citizens on June 1, 1948 - \$15,000,000

CURRENT CONTRACT DATA 1953-1954					
Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
A - MAJOR THOROUGHFARES					
Stanley Drive - Between Junipero Serra Blvd. and Alemany Blvd. - (Construction) Plombo Constr. Co.	8-27-52	4-27-53	\$181,127.77	\$ 28,552.77	Spec.Rd. Major Sts.
Alemany Blvd. - Between Mission St. & San Jose Ave. (Resurfacing) Lowrie Paving Co., Inc.	2-27-53	8-5-53	66,506.27	39,506.27	State Hwy.
Clay St. - Between Scott St. and Arguello Blvd. (Reconstruction) Lowrie Paving Co., Inc.	4-15-53	9-29-53	138,686.79	135,541.79	Major Str. Spec.Rd.
Richardson Ave. Between Broderick St. & Lyon St. - Golden Gate Bridge Approach Ramps (Resurfacing) Lowrie Paving Co., Inc.	4-17-53	9-8-53	15,657.87	15,657.87	State Hwy.
24th St. Between South Van Ness Ave. & Vermont St. (Reconstruc- tion) U. Peira & Son	4-29-53	10-12-53	95,852.89	83,952.89	Spec.Rd.
Arguello Blvd. Between Washington St. & Fulton St. & Other Locations (Resurfacing) Lowrie Paving Co., Inc.	4-29-53	9-30-53	49,717.65	45,442.65	Major Str. Spec.Rd.
Golden Gate Park Main Drive And Panhandle At Stanyan St., Fell St., and Oak St. (Channeliza- tion) Eaton & Smith	5-1-53	11-5-53	90,778.34	84,233.34	Spec.Rd.

Spec. Rd.	84,233.34	90,778.34	11-5-53	5-1-53	11-5-53	84,233.34	Spec. Rd.
Major Sts. Spec. Rd. 1944 Sewer Bonds	177,815.29	177,815.29	2-5-54	5-13-53	177,815.29	177,815.29	Major Sts. Spec. Rd. 1944 Sewer Bonds
Spec. Rd.	4,035.65	4,035.65	9-4-53	6-5-53	4,035.65	4,035.65	Spec. Rd.
Spec. Rd.	49,470.00	67,169.50	99%	2-3-54	49,470.00	67,169.50	Spec. Rd.
Major Sts. Spec. Rd.	59,160.00	96,631.60	72%	3-24-54	59,160.00	96,631.60	Major Sts. Spec. Rd.
Spec. Rd.	3,675.00	46,633.00	11%	5-19-54	3,675.00	46,633.00	Spec. Rd.
Total Awarded and Expended During Fiscal Year	\$210,434.10	\$727,043.52					

CURRENT CONTRACT DATA 1953-1954

Street or Subdivision	Impmts.	Contractor	Away	Contract Amount
B-1 STREETS - PRIVATE CONTRACTS Pd. Property Owners				
*Los Palmos Drive - Foerster to Teresita	S-C-P	Pay Improv. Co.	10-2-51 8-6-53	\$ 14,500.00
*Moreland St. - Diamond to Parnum Moreland St. - Adeline St.	C-P	Pay Impr. Co.	11-26-52 7-17-53	6,900.00
*Cambridge St. - Silliman to Pelton Pelton St. - Oxford to Cambridge	S-C-P	Pay Impr. Co.	11-26-52 7-15-53	13,100.00
Corwin St. - Douglass St. to Westerly Terminus	S-C-P	Pay Impr. Co.	12-12-52 8-11-53	19,000.00
*Corwin St. - Acme Alley	S-C-P	Eaton & Smith	12-17-52 10-8-53	16,200.00
*Locksley Ave. (E½) - Lawton to Southerly Terminus	S-C-P	Pay Impr. Co.	1-30-53 7-23-53	27,000.00
Charter Oak Ave. - Industrial St. 75' N Helena	Tr.Wk	Eaton & Smith	4-1-53 11-10-53	2,500.00
Juniper St. - Harrison to Bryant Juniper St. - Bryant St.	S	Pay Impr. Co.	5-13-53 11-24-53	6,560.00
Grand View Terrace Sewers	P	Pay Impr. Co.	5-20-53 9-25-53	1,000.00
Mercury St. - 67' S. Thornton to 185' Southerly	C-P	Chas. Harney, Inc.	5-29-53 10-16-53	15,500.00
Shafter Ave. - Hawes to Griffith	C-P	Standard Bldg. Co.	6-5-53 10-9-53	52,000.00
Lakeshore Country Club Acres #3				

1851, Southern
Shaffer Ave. - Hawes to Griffith
O-P Chan. Harvey, Inc. 5-29-53 10-10-53 15,500.00
O-P Standard Bldg. Co. 6-5-53 10-9-53 52,000.00
Lakeshore Country Club Acres #3

APPENDIX I

1-5

Watson Place (Closing)	C-P	The Pay Impr. Co.	7-31-53	10-27-53	1,500.00
Dwight St. - Colby to Dartmouth	S-C-P	The Pay Impr. Co.	8-14-53	10-28-53	8,100.00
Army St. - 3rd St. to Michigan	S-C-P	Eaton & Smith	9-23-53	5-5-54	17,700.00
Army St. - Crossing Illinois	S-C-P	The Pay Impr. Co.	9-25-53	99%	700.00
Orday St. ($N\frac{1}{2}$) - Goettingen St. & 35' E	C-S-P	The Pay Impr. Co.	10-28-53	99%	15,200.00
Goettingen St. - Ordway to Ward	C-P	Barrett & Hilp	11-6-53	11-16-53	3,000.00
Junipero Serra Blvd. - West Service Rd. - Rossmoor Dr. - Stonecrest Dr.	S-C-P	Standard Bldg. Co.	11-20-53	99%	51,000.00
Midtown Terrace No. 2 (Contract #2) Streets Within	C-P	The Pay Impr. Co.	11-20-53	5-20-54	11,300.00
Grand View Terrace - Grand View Ave. to N. Termination	S	Watkins & Siebald	12-18-53	0%	1,000.00
Ocean Ave. ($N\frac{1}{2}$) - 200' & 400' West San Jose	S	Cahill Bros. Inc.	12-30-53	3-21-54	7,000.00
Florida St. - Alameda St. & 160' S 15th St.	C-P	The Pay Impr. Co.	1-6-54	30%	7,300.00
*Putnam St. Portions - Jarboe to Tompkins	S-C-P	Lowrie Paving Co.	1-20-54	98%	12,300.00
Restani Terrace - Streets Within	C-P	Rosenberg Bros. Grading	2-3-54	2-24-54	3,900.00
Point Lobos Ave. ($S\frac{1}{2}$) - 42nd Ave. & 43rd Ave.	S-C-P	The Pay Impr. Co.	2-10-54	0%	14,400.00
Oxford St. - Burrows & Bacon					

CURRENT CONTRACT DATA 1953-1954

Street or Subdivision	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
STREETS - PRIVATE CONTRACTS					
Pd. Property Owners (Cont'd)					
Inhood Drive - 570' W Lansdale 143' W	S	Lowrie Paving Co.	4-14-54	5-4-54	\$ 2,100.00
Rida St. - Division to 16th	C-P	Cahill Bros.Inc.	6-4-54	0%	22,500.00
al Awarded During Fiscal Year					\$179,000.00
al Value of Work Done During scal Year					\$248,855.00

Remaining Portions Improved Under Public-City Pay Contract

- Sewers
- Grading
- Paving
- Curbs
- Sidewalk
- Catchbasin

CURRENT CONTRACT DATA 1952-1953

Street or Subdivision	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - ASSESSMENT PROCEEDINGS					
Los Palmos Drive - Foerster-Verna Intersections	S-C-W-P	Pay Impr. Co.	9-19-51	8-7-53	\$ 5,038.22 (479.60) -
*Los Palmos Drive - Foerster to Teresita Blvd.	C-S-P	Pay Impr.Co.	10-3-51	8-6-53	11,889.37 (6,334.33) -
Cambridge St. - Felton St.Crossing	C-P	Pay Impr.Co.	11-5-52	7-15-53	3,005.24 (345.44) -
*Cambridge St. - Silliman to Felton Felton St. - Oxford to Cambridge	C-P	Pay Impr.Co.	11-26-52	7-15-53	7,689.85 (3,195.59) -
*Moreland St. - Diamond to Farnum	C-P	Pay Impr.Co.	11-26-52	7-17-53	5,167.26 (1,608.09) -
*Corwin St. - Acme Alley to Westerly Termination	C-P	Pay Impr. Co.	12-12-52	8-11-53	7,927.78 (4,473.35) -
Vernon St. - Shields to Sargent	C-S-P	Pay Impr. Co.	12-17-52	7-21-53	18,920.95 (5,304.99) -
*Lawton St. - 7th Ave. to Locksley Locksley Ave. - Lawton to Southerly Termination	S-C-P	Eaton & Smith	12-17-52	10-8-53	11,151.80
Duncan St. - Noe to Newburg	S-C-P	Eaton & Smith	12-17-52	9-16-53	29,256.16 (12,206.50) -
Kirkham St. - 4th Ave. to 5th Ave.	S-C-P-W	E. J. Treacy	1-14-53	6-20-53	9,129.36 (3,166.69) -
Bird St. - Dearborn to Easterly Termination	C-P	M. J. Lynch	6-19-53	10-8-53	2,492.00
			- - - -	- - - -	- - - -

CURRENT CONTRACT DATA 1952-1953

Street or Subdivision	Impvta.	Contractor	Awarded	Completed Date or %	Contract Amount
B-2 STREETS - ASSESSMENT PROCEEDINGS (Cont'd)					
Goettingen St. Crossings at Ordway St. & Ward St.	S-C-P	Pay Impr. Co.	9-25-53	99%	\$ 8,401.70 (4,900.00) -
Golden Gate Heights - Paving Contract #5	P	Chas. L. Harney	9-25-53	4-1-54	27,559.50 (14,500.00) -
Hawes St. - Ingerson to Jamestown Hawes St. - Crossing of Ingerson	C-P	Chas. L. Harney	9-30-53	2-18-54	5,987.68 (1,318.91) -
Burrows St. - Gambier St. W/L to Cambridge E/L	C-P	Pay Impr. Co.	10-7-53	99%	21,092.75 (6,400.00) - (10,200.00) -
Nueva Ave. - Blanken to Lathrop	C-P	Pay Impr. Co.	10-7-53	12-17-53	5,579.70 (4,000.00) -
Delta St. - Campbell to Teddy	S-C-P	Chas. L. Harney	10-7-53	12-17-53	4,318.50 (2,600.00) -
Jarboe Ave. (S $\frac{1}{2}$) - Bronte & 70' Westerly	C-P	Eaton & Smith	11-20-53	1-18-54	648.00 (500.00) -
Grand View Terrace - Grand View Ave. to N'ly Termination	C-P	Pay Impr. Co.	11-20-53	5-20-54	2,050.00 (1,200.00) -
Whiting St. - Grant Ave. to E'ly Termination	C-P	Ceccotti & Son	12-18-53	3-15-54	1,172.15 (800.00) -
Moscow St. - Peru to Silliman Silliman St. - Moscow to Madison Silliman St. - Intersection Moscow	S-C-P	Eaton & Smith	1-6-54	99%	16,647.00 (12,000.00) -

withing St. - Grant Ave. to Ely Termination	C-P	Sacotti & Son	12-18-53	3-15-54	(1,800.00) -
Moscow St. - From to Sillman Sillman St. - Moscow to Madison	S-C-P	Eaton & Smith	1-6-54	99%	(16,687.00) - (18,000.00) -
Putnam St. - Crossing Tompkins	C-P	Pay Impr. Co.	1-17-54	20%	2,112.40 (400.00) -
*Putnam St. (Portions - Jarboe to Tompkins	C-P	Pay Impr. Co.	1-6-54	30%	3,569.50 (1,200.00) -
Capistrano Ave. - Block 3146 - Drain	D-S	Pay Impr. Co.	1-17-54	0%	6,864.00 (3,900.00) -
France Ave. - Paris to Lisbon	C-P	E. J. Treacy	4-30-54	0%	6,276.92 (3,700.00) -
Flint St. - 16th St. to 294' N 16th St. - Flint to 202' W & Intersection	S-C-P	Chas. L. Harney	6-23-54	0%	14,707.80 (3,200.00) -
Total Awarded During Fiscal Year					\$126,987.60
Total Value of Work Done During Fiscal Year					\$156,658.95

* Remaining Portions of Street Under Private Contract

() - Estimated Amount of City Obligation. Balance Through Assessment of Property Benefited.
City Funds From Special Road Improvement Fund.

S - Sewers
C - Curbs
P - Paving
W - Sidewalks
D - Drains

CURRENT CONTRACT DATA 1953-1954					
Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
B-3 STREETS - PUBLIC CONTRACT CITY PAY					
37th Ave. - Between Ortega and Quintara St.	1-16-53	12-23-53	\$ 29,139.62	\$ 29,136.62	S.P.Unified Sch.Dist.
Quintara St. - Between 37th Ave. & 38th Ave. (Sewers, Curbs, Paving) C. L. Harney, Inc.					Spec. Rd.
Graystone Terrace (N'y Side) - Between Copper and Iron Alleys (Constr. Conc. Sidewalks) Love & Haun	5-22-53	7-3-53	678.83	678.83	S.P.Unified Sch. Dist.
*Shafter Ave. (Portions) - Between Hawes St. & Griffith St. (Curbs & Paving) Chas. L. Harney, Inc.	5-29-53	10-16-53	2,490.60	2,490.60	Spec. Rd.
Santiago St. (N $\frac{1}{2}$) - Between 22nd Ave. and 350 Pt. West	6-12-53	9-21-53	3,520.95	3,520.95	S.P.Unified Sch. Dist.
22nd Ave. (N $\frac{1}{2}$) - Between Rivers St. (N/L) and Santiago St. (Sidewalks-Incidental Work) Pay Impr. Co.	- - - -	- - - -	- - - -	- - - -	- - - -
Merchant St. (S $\frac{1}{2}$) Between Drumm St. & Embarcadero (Widening) E. J. Treacy	7-3-53	12-22-53	3,818.00	3,818.00	Spec. Rd.
Bush St. Between Stockton St. & Grant Ave. (Reconstruction) Chas. L. Harney, Inc.	9-18-53	11-30-53	13,129.52	13,129.52	Major Sta.

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	9-18-53	11-30-53	13,129.52	13,129.52	Major Sts.
Jessie St. Between 10th St. & 305' E'ly (Improvement & (Reconstruction) Eaton & Smith	10-7-53	1-12-54	\$ 3,870.15	\$ 3,870.15	Spec. Rd.
Junipero Serra Blvd. Between Darien Way & San Aleso Ave. (Seal Coat) E. J. Treacy	11-27-53	1-7-54	2,008.69	2,008.69	Spec. Rd.
Goettingen St. between Wilde Ave. & Campbell Ave. (Reconstruction) Love & Haun	12-4-53	1-26-54	2,501.68	2,501.68	Spec. Rd.
Lombard St. Between Sansome St. & Battery St. (Reconstruction) Eaton & Smith	1-6-54	2-24-54	2,540.60	2,540.60	Spec. Rd.
Broadway and Other Streets (Brick Pavement Replacement) Eaton & Smith	1-13-54	5-13-54	62,529.84	62,529.84	Spec. Rd.
Laurel St. (E½) Between California St. & Euclid Ave. (Widening) Chas. L. Harney, Inc.	2-17-54	4-14-54	3,586.37	3,586.37	Spec. Rd.
Noriega St. Between 20th Ave. & Great Highway 48th Ave. Between Lincoln Way and Taraval St., (Resurfacing Contract No. 2) Pacific Pavement Co.	2-24-54	5-27-54	52,752.14	52,752.14	Major Sts. Spec. Rd.
St. Francis Wood (Street Resurfacing) Lowrie Pav.Co., Inc.	3-24-54	5-10-54	29,431.42	21,165.00	Spec. Rd. Major Sts.
Pine St. Between Larkin St. and Franklin St. (Widening) Lowrie Paving Co., Inc.	3-24-54	7%	20,528.40	1,190.00	Major Sts. Spec. Rd.
Battery St. Between Market St. & Broadway & Others (Resurfacing) Lowrie Paving Co., Inc.	3-31-54	42%	41,615.00	15,045.00	Major Sts. Spec. Rd.

CURRENT CONTRACT DATA 1953-1954					
Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
B-3 STREETS - PUBLIC CONTRACT CITY PAY (Continued)					
Polk St. Between McAllister St. & Golden Gate Ave. Chestnut St. Between Polk St. & 214' E (Pavement Replacement) The Pay Improvement Co.	3-31-54	5-27-54	\$ 7,567.60	\$ 7,567.60	Spec. Rd.
Avila St. Between Marina Blvd. & Chestnut St. & Others (Street Resurfacing) Eaton & Smith	4-14-54	6-4-54	13,971.20	13,971.20	Spec. Rd.
23rd St. Between Dakota St. & Missouri St. (Curbs-Paving) Love & Haun	4-14-54	10%	4,061.50	0	Spec. Rd.
Bay St. Between Leavenworth St. & Van Ness Ave. & Others (Street Resurfacing) Lowrie Paving Co. Inc.	5-12-54	88%	32,725.00	24,820.00	Major Sts. Spec. Rd.
Hunters Point Housing Streets Within (Reconstruction) Chas. L. Harney, Inc.	5-21-54	0%	36,232.00	0	Spec. Rd.
Total Awarded and Expended During Fiscal Year			\$332,869.11	\$266,325.79	

CURRENT CONTRACT DATA 1953-1954

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
B-4 STREETS - CAR TRACK REMOVAL					
Turk St. - Market to Divisadero	6-25-52	8-6-53	\$ 441,233.51	\$ 76,668.51	Major Sts. 1947 St.
Eddy St. - Market to Divisadero					Imp. Bd.
Mason St. - Turk to Eddy (Removal of Tracks & Reconstruction of Pavement)					Spec. Rd.
Plombo Const.Co.					
Polsom St. - 3rd to Precita	2-20-53	11-3-53	470,696.29	228,616.29	Major Sts. Spec. Rd.
Precita Ave. - Folsom to Army					1947 St.
Army St. - Bryant to Potrero					Imp. Bd.
26th St. - Mission to Bryant (Removal of Tracks & Reconstruction of Pavement)					Chas.L.Harney
Army St. - 3rd to Kansas (Removal of Tracks and Reconstruction of Pavement)	4-3-53	8-14-53	56,645.12	32,080.12	Spec. Rd. 1947 St.
Lowrie Paving Co., Inc.					Imp. Bd.
Powell St. - Broadway to The Embarcadero	5-13-53	11-5-53	160,846.07	140,531.07	1947 St. Imp. Bd.
Vallejo St. - Van Ness to Larkin					
Union St. - Larkin to Columbus					
Larkin St. - Vallejo to Union (Removal of Tracks & Reconstruction of Pavement)					Eaton & Smith
Bryant St. at Intersections of 9th & 10th Sts. (Removal of Tracks & Reconstruction of Pavement)	5-20-53	7-24-53	5,186.90	5,186.90	1947 St. Imp. Bd.
Chas. L. Harney, Inc.					

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CURRENT CONTRACT DATA 1953-1954

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Pund
B-4 STREETS - CAR TRACK REMOVAL (Cont'd)					
Ellis St. between Market & Divisadero (Removal of Tracks & Reconstruction of Pavements) The Lowrie Paving Co., Inc.	8-5-53	4-15-54	\$ 251,385.41	\$ 251,385.41	1947 St. Imp. Bd. Spec. Rd.
Bryant St. between Rincon & Division (Removal of Tracks & Reconstruction of Pavement) Chas. L. Harney, Inc.	9-23-53	1-15-54	98,193.90	98,193.90	General- 1947 St. Imp. Bd.
Clement St. between Park Presidio Blvd. & 32nd Ave. (Track Removal & Pavement Reconstruction) The Lowrie Paving Co., Inc.	10-30-53	3-17-54	165,202 10	165,202.10	Spec. Rd. 1947 St. Imp. Bd.
Balboa St. between Arguello & 31st Arguello Blvd. between Turk & Balboa Turk St. between Divisadero & Arguello (Track Removal & Pavement Reconstruction) Chas.L.Harney, Inc.	10-30-53	99%	285,661.94	242,250.00	Major Sts. 1947 St. Imp. Bd. 1944 Sewer Bonds
11th St. between Market & Division Potrero Ave. between Division & 16th (Track Removal & Pavement Reconstruction) The Pay Impr. Co.	11-25-53	3-26-54	60,618.07	60,618.07	Spec. Rd. 1947 St. Imp. Bd.
Waller St. bet. Stanyan & Masonic Ashbury St. bet. Frederick & Clayton Clayton St. bet. Ashbury & Carmel (Track Removal & Pavement Reconstruction) Eaton & Smith	1-13-54	4-20-54	114,399.48	114,399.48	Spec. Rd. 1947 St. Imp. Bd.

CURRENT CONTRACT DATA 1953-1954					
Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
C TRAFFIC SIGNALS & CHANNELIZATION					
Mission District (Installation of Traffic Signal System) R. Flatland	1-2-53	99%	\$267,662.00	\$147,985.00	Major Sts. Spec. Rd.
Market St. bet. The Embarcadero and 10th St. - 1st Contract (Traffic Signals & Channelization) Ets Hokin & Galvin	2-25-53	10-2-53	66,318.79	28,878.79	Major Sts.
Franklin St. bet. Grove & Chestnut Gough St. bet. Grove & Chestnut (Traffic Signal System) Fred Johnson Electric Co.	4-1-53	3-8-54	55,614.06	46,389.06	Spec. Rd. Major Sts.
Broadway bet. Polk & Columbus (Traffic Signals) Abbett Electric Corp.	4-8-53	7-30-54	13,734.70	13,734.70	Spec. Rd.
Traffic Signals at Isolated Crossings - 11th Contract (Installation Traffic Signals) R. Flatland	4-24-53	4-13-54	109,682.45	98,882.45	Spec. Rd.
Market St. bet. The Embarcadero & 10th St. - 2nd Contract (Traffic Signals & Channelization) Abbett Electric Corp.	5-20-53	9-30-53	19,452.92	19,452.92	Spec. Rd.
	- - - -	-	- - - -	-	
West Portal bet. Ulloa & 15th Ave. (Channelization) Pacific Pavements Co., Ltd.	7-29-53	10-30-53	16,647.86	16,647.86	Spec. Rd.

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Traffic Signals at Isolated Crossings - 10th Contract (Installation) R. Flatland	9-2-53	4-13-54	60,912.59	60,912.59	Spec. Rd.
Montgomery St. bet. California & Sutter St. (Traffic Signals) Ets Hokin & Galvin	10-14-53	12-29-53	8,867.82	8,867.82	Spec. Rd.
Kearny St. bet. Sutter & Post Stockton St. bet. Sutter & O'Farrell (Installation of Traffic Signals) Abbott Electric Corp.	12-30-53	4-13-54	28,158.30	28,158.30	Major Sts. Spec. Rd.
Market St. bet. Douglass & Hattie (Channelization) E. J. Treacy	1-6-54	6-28-54	7,498.74	7,498.74	Major Sts.
Market St. bet. The Embarcadero & 10th St. (Traffic Signals & Channelization) (3rd Contract) Abbott Electric Corp.	3-19-54	5-18-54	15,265.16	15,265.16	Major Sts.
7th St. at Bryant St. & Harrison (Bryant & Harrison Sts. Signal System Contr. 1) (Traffic Signals) R. Flatland	3-19-54	5-18-54	19,801.53	19,801.53	Major Sts.
Traffic Signals at Isolated Cross- ings - Contract No. 12 (Installation) Abbott Elec. Corp.	5-19-54	6%	69,965.50	3,440.00	Major Sts. Spec. Rd.
Traffic Signals at Various Inter- sections Contr. #1 (Modification of) R. Flatland	5-26-54	23%	15,849.00	0	Major Sts. Spec. Rd.
Total Awarded and Expended During Fiscal Year			\$242,966.50	\$515,914.92	

CURRENT CONTRACT DATA 1953-1954

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
D-1 SEWERS - PIPE, VITRIFIED CLAY & CONCRETE					
Mendell St. Sewer Outlet and Sanitary Sewers, Fairfax Ave. to Davidson Ave. (Mendell St. Sewer 1st Contract) Chas. L. Harney, Inc.	2-6-53	11-20-53	\$ 52,394.66	\$ 49,244.66	1944 Sewer Bonds
Southeast Collecting Sewers Sec.C-2 Islais Creek North Shore Sanitary Sewer (Construction) M.J.Lynch	3-4-53	2-2-54	126,300.92	126,300.92	1948 Sewage Tr. Bonds
Parnassus Ave. bet. Arguello and Stanyan (Sewer Replacement) The Fay Improvement Co.	4-10-53	11-24-53	64,073.46	54,473.46	1944 Sewer Bonds
14th St. Overflow Sewer East of Harrison St. (Repair-Guniting) Cement Gun Constr. Co.	6-24-53	8-31-53	9,318.63	9,318.63	General
- - - - -					
Southeast Collecting Sewers Sec.E-3 Hunters Point Pumping Station Diver- sion Structure Force Main & Connecting Sewers (Construction) Western Plumbing & Heating W. Lenkeit & Co.(Joint Venture)	9-16-53	96%	149,840.60	122,400.00	1948 Sewage Tr. Bonds
Skyline Sunset Outlet Sewer (2nd Contract) Zoo and 44th Ave. - Skyline Blvd. to Vicente St. (Construction) M. J. Lynch	10-16-53	77%	164,546.10	108,715.00	1944 Sewer Bonds

10-16-54	77%	164,546.10	108,715.00	1944 Sewer Bonds
skyline Sunset Outlet Sewer (Snd Contract Alving and Voth Ave. - Construction) M. J. Lynch				
Silver Ave. from Gambler to Congdon Congdon St. from Silver to Alemany (Replacement of Sewer) M & K Corp.	83%	81,582.00	54,080.00	1944 Sewer Bonds
Whitney St. from Randall to 30th (Replacement of Sewer) Lowrie Paving Co., Inc.	4-14-54	14,193.10	14,193.10	General
Blurume St. Sewer bet. 4th & 5th (Sewer Replacement) The Fay Improvement Co.	90%	21,780.00	19,040.00	1944 Sewer Bonds
Bush St. & Mason (Sewer Replacement) Associated Pipeline, Inc.	30%	8,580.00	0	General
Funston Ave. bet. Taraval & Santiago (Sewer Replacement) Michael Murphy, Jr.	0%	7,732.50	0	General
Waller St. & Fillmore St. bet. Steiner & Duboce (Repair by Guniting) Cement Gun Constr.Co.	0%	7,790.00	0	General
Peralta Ave. & York St. bet. Franconia & Precita (Sewer Reconstruction Prop. "A") M.J.Lynch	0%	5,560.00	0	General
El Camino del Mar & Seaclyff Ave. bet. Lake & 27th Ave. (Sewer Replacement) The Fay Impr. Co.	0%	78,890.00	0	1944 Sewer Bonds
Total Awarded and Expended During Fiscal Year		\$540,494.30	\$557,765.77	

CURRENT CONTRACT DATA 1953-1954					Fund
Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	
D-2 SEWERS - CONCRETE MONOLITHIC					
Southeast Collecting Sewers-Sec. E-2, F-1, F-2, F-3 Hunters Point Sewer Tunnel and Adjacent Sewers (Construction) (M & K Corp. { Fredrickson & Watson Co. } Piombo Constr. Co.)	8-20-52	1-27-54	\$1,199,014.97	\$ 520,374.97	1948 Sewage Tr. Bonds
Southeast Collecting Sewers-Sec. D-1, D-2, D-3 Mariposa Diversion Structure, Sewage Pumping Sta. Force Main and Connecting Sewers (Construction) Chas. L. Harney, Inc.	9-12-52	3-9-54	194,771.52	135,526.52	1948 Sewage Tr. Bonds
14th St. - Folsom to Harrison (Sewer Replacement) Chas. L. Harney, Inc.	10-22-52	10-30-53	131,530.85	115,690.85	1944 Sewer Bonds
18th St. Sewer - Section "A" - Shotwell to Church	4-29-53	96%	641,679.00	523,600.00	1944 Sewer Bonds Spec. Rd.
18th St. - Harrison to Guerrero (Sewer Constr. Street Widening) M & K Corporation	6-3-53	9-11-53	8,925.00	8,925.00	1948 Sewage Tr. Bonds
20th Ave. & Lincoln Way (Reconstruction of Sewer Transition Structure) M. J. Lynch	- - - -	- - - -	- - - -	- - - -	- - - -
Cortland Ave. bet. Bradford & Bayshore (Sewer Replacement) Eaton & Smith	5-26-54	5%	37,885.00	1,200.00	General
Total Awarded and Expended During Fiscal Year			\$ 37,885.00	\$1,305,317.34	

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CURRENT CONTRACT DATA 1953-1954

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
E MISCELLANEOUS					
Bryant St. Viaduct bet. 2nd & Beale (Construction of Viaduct) Chas. L. Harney, Inc.	9-21-51	8-20-53	\$298,207.69	\$ 53,662.69	Major Sts. 1947 St. Imp. Bd.
Naglee Ave - Alemany Blvd. - Cayuga Ave. (Construction of Sewer and Stairway) Chas. L. Harney, Inc.	10-17-52	9-4-53	6,490.00	1,475.00	Spec. Rd. General
Youth Guidance Center near Portola Drive & Woodside Ave. (Reconstruc- tion of Misc. Existing Slopes & Drainage Facilities) The Pay Improvement Co.	11-14-52	7-28-53	23,037.11	5,569.61	Spec. Rd. Juv. Detc. Fund
Phelan Beach Recreation Area (2nd Contract) (Improvement) Hart & Hynding	1-2-53	8-7-53	60,006.04	19,731.04	1947 Rec. Bonds
Alpha St. - Tioga Ave. Connection (Construction of Stairways and Additional Improvements) Lowrie Paving Co., Inc.	2-11-53	5-12-53	3,995.76	3,995.76	Spec. Rd.
Mission-Bartlett Parking Plaza bet. 21st & 22nd Sts. (Construction) Lowrie Paving Co., Inc.	4-1-53	7-17-53	44,183.00	22,658.00	1947 Off St. Parking Bond
Sloat Blvd. bet. Junipero Serra Blvd. and The Great Highway (Planting) Bernard Gayman	4-3-53	7-28-53	10,571.43	7,496.43	Spec. Rd. State Hwy.

CURRENT CONTRACT DATA 1953-1954

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
E MISCELLANEOUS (Continued)					
Maintenance Yard At 2323 Army St. (2nd Contract) (Miscellaneous Improvements) Adsm Arras & Son	6-3-53	11-13-53	\$ 35,079.50	\$ 35,079.50	General
Broadway Tunnel (Construction of Partition Walls) Bergquist Constr. Co.	6-12-53	9-4-53	3,114.00	3,114.00	Spec. Rd. Imp.
	- - - -	- - - -	- - - -	- - - -	- - - -
Portola Drive (S) Southwest of Terrace Drive (Removal of Tree) Leslie S. Mayne	7-10-53	9-2-53	120.00	120.00	Spec. Rd.
Phelan Beach Recreation Area (3rd Contract) (Addition to Timber Stairway) Hart & Hynding	7-8-53	7-23-53	1,981.00	1,981.00	1947 Rec. Ed.
Monterey Blvd. near Plymouth (Construction of Pipe Railing) DiMartini Bros.	7-29-53	9-25-53	1,293.00	1,293.00	Spec. Rd.
Harrison St., Perry & 4th St. - Relocation of Auxiliary Water Supply System (Construction) Associated Pipeline, Inc.	8-5-53	11-27-53	21,450.00	21,450.00	State Hwy.
El Camino Del Mar - Area North of Removal of Slide Materials Robert A. Parish	9-2-53	11-11-53	23,007.45	23,007.45	Spec. Rd.
Jerrold Ave. bet. Quint & Phelps (Construction of Sidewalk) Geccott & Son	9-11-53	10-30-53	1,890.35	1,890.35	Spec. Rd.

	9-11-53	10-30-53	1,890.35	1,890.35	Spec. Rd.
Robert A. Welsh {Construction of Sidewalk} Gennetta & Son					
Southeast Collecting Sewers Sec.B-1, B-2. (Perforated Baffle Screen) Acme Welding Co.	9-16-53	2-1-54	1,862.00	1,862.00	1948 Sewage Tr. Bd.
Southeast Collecting Sewers Sec.B-1, B-2 (Fence Extensions & Safety Signs) R. H. Wulfert	9-30-53	0%	309.00	0	1948 Sewage Tr. Bd.
Parker Ave. Drainage & Access Shaft and Tunnel Extension (Construction) Arthur Wallgren & Richard Petersen, Joint Venture	10-2-53	1-27-54	23,461.77	23,461.77	Spec. Rd.
Ingerson Ave. near Griffith St. (Regrading & Recompacting Slide Area) Chas. L. Harney, Inc.	10-8-53	99%	25,448.07	0	Spec. Rd.
Islands Creek Bridge (Repairs to Concrete Columns) Judson-Pacific Murphy Corp.	10-27-53	1-8-54	33,325.17	33,325.17	Spec. Rd.
Harkness Ave. at Bishop St. (Reconstruction & Stabilization of Slide) Chas. L. Harney, Inc.	10-19-53	4-8-54	6,425.55	6,425.55	Spec. Rd.
Southeast Sewage Treatment Plant (Installation of Ferric Chloride Pumping System) Anderson & Rowe, Inc.	11-4-53	5-27-54	5,505.00	5,505.00	1948 Sewage Tr. Bd.
Hall of Justice Boiler (Retubing of Existing Boiler #1) C. C. Moore & Co.	11-13-53	1-26-54	5,255.00	5,255.00	General.
Castro St. 75' (S) of Day St. (Removal of Tree) Warner Tree Service	11-20-53	2-9-54	85.00	85.00	Spec. Rd.
Lyon St. (N) Vallejo St. (Removal of Tree) Hallowell King Co.	12-4-53	3-9-54	135.00	135.00	Spec. Rd.

CURRENT CONTRACT DATA 1953-1954

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1953-1954	Fund
E MISCELLANEOUS (Continued)					
3rd St. Bridge Over Channel St. Waterway (Alterations) Payne Construction Co.	12-4-53	99%	\$78,520.00	\$66,400.00	Major Sts. Spec. Rd. 1947 St. Imp. Bd.
Broadway Tunnel (Planting at the East & West Ventilation Bldg.) Fred W. Bullock	12-9-53	1-12-54	1,479.00	1,479.00	1947 St. Imp. Bd.
Monterey Blvd. near Northgate Drive (Pipe Railing on Retaining Wall) Thulin-Bray & Miller, Inc.	12-16-53	3-3-54	1,250.00	1,250.00	Spec. Rd.
Hassler Health Home (Garbage Cooker Bldg.) M. J. Purcell	12-23-53	3-9-54	1,849.70	1,849.70	General
Sunnydale Ave. (S $\frac{1}{2}$) in Front of Sunnydale School (Concrete Sidewalk) Love & Haun	1-27-54	4-26-54	1,373.71	1,373.71	1948 Sch. Bond
Fitzgerald Ave. at Griffith St. (Test Borings) J. N. Pitcher Co.	2-3-54	3-2-54	85.00	85.00	General
North Point Sewage Treatment Plant (Vortex Baffles in Chlorination Bldg.) Bergquist Constr. Co.	2-10-54	4-13-54	2,937.00	2,937.00	1948 Sewage Tr. Bd.
Southeast Sewage Treatment Plant (Reconstruction of Dietrich Arch - Furnace #3) J. T. Thorpe & Son	2-17-54	3-22-54	2,902.71	2,902.71	1948 Sewage Tr. Bd.
Phelps St. (W $\frac{1}{2}$) bet. McKinnon & Jerrold Ave. (Construction Sidewalk) U. Peira & Son	3-5-54	6-9-54	2,766.19	2,766.19	Spec. Rd.

Payroll #3) J. K. Thorne & Son Payroll #4) J. K. Thorne & Son Payroll #5) J. K. Thorne & Son Payroll #6) J. K. Thorne & Son Payroll #7) J. K. Thorne & Son Payroll #8) J. K. Thorne & Son Payroll #9) J. K. Thorne & Son Payroll #10) J. K. Thorne & Son Payroll #11) J. K. Thorne & Son Payroll #12) J. K. Thorne & Son Payroll #13) J. K. Thorne & Son Payroll #14) J. K. Thorne & Son Payroll #15) J. K. Thorne & Son Payroll #16) J. K. Thorne & Son Payroll #17) J. K. Thorne & Son Payroll #18) J. K. Thorne & Son Payroll #19) J. K. Thorne & Son Payroll #20) J. K. Thorne & Son Payroll #21) J. K. Thorne & Son Payroll #22) J. K. Thorne & Son Payroll #23) J. K. Thorne & Son Payroll #24) J. K. Thorne & Son Payroll #25) J. K. Thorne & Son Payroll #26) J. K. Thorne & Son Payroll #27) J. K. Thorne & Son Payroll #28) J. K. Thorne & Son Payroll #29) J. K. Thorne & Son Payroll #30) J. K. Thorne & Son Payroll #31) J. K. Thorne & Son Payroll #32) J. K. Thorne & Son Payroll #33) J. K. Thorne & Son Payroll #34) J. K. Thorne & Son Payroll #35) J. K. Thorne & Son Payroll #36) J. K. Thorne & Son Payroll #37) J. K. Thorne & Son Payroll #38) J. K. Thorne & Son Payroll #39) J. K. Thorne & Son Payroll #40) J. K. Thorne & Son Payroll #41) J. K. Thorne & Son Payroll #42) J. K. Thorne & Son Payroll #43) J. K. Thorne & Son Payroll #44) J. K. Thorne & Son Payroll #45) J. K. Thorne & Son Payroll #46) J. K. Thorne & Son Payroll #47) J. K. Thorne & Son Payroll #48) J. K. Thorne & Son Payroll #49) J. K. Thorne & Son Payroll #50) J. K. Thorne & Son Payroll #51) J. K. Thorne & Son Payroll #52) J. K. Thorne & Son Payroll #53) J. K. Thorne & Son Payroll #54) J. K. Thorne & Son Payroll #55) J. K. Thorne & Son Payroll #56) J. K. Thorne & Son Payroll #57) J. K. Thorne & Son Payroll #58) J. K. Thorne & Son Payroll #59) J. K. Thorne & Son Payroll #60) J. K. Thorne & Son Payroll #61) J. K. Thorne & Son Payroll #62) J. K. Thorne & Son Payroll #63) J. K. Thorne & Son Payroll #64) J. K. Thorne & Son Payroll #65) J. K. Thorne & Son Payroll #66) J. K. Thorne & Son Payroll #67) J. K. Thorne & Son Payroll #68) J. K. Thorne & Son Payroll #69) J. K. Thorne & Son Payroll #70) J. K. Thorne & Son Payroll #71) J. K. Thorne & Son Payroll #72) J. K. Thorne & Son Payroll #73) J. K. Thorne & Son Payroll #74) J. K. Thorne & Son Payroll #75) J. K. Thorne & Son Payroll #76) J. K. Thorne & Son Payroll #77) J. K. Thorne & Son Payroll #78) J. K. Thorne & Son Payroll #79) J. K. Thorne & Son Payroll #80) J. K. Thorne & Son Payroll #81) J. K. Thorne & Son Payroll #82) J. K. Thorne & Son Payroll #83) J. K. Thorne & Son Payroll #84) J. K. Thorne & Son Payroll #85) J. K. Thorne & Son Payroll #86) J. K. Thorne & Son Payroll #87) J. K. Thorne & Son Payroll #88) J. K. Thorne & Son Payroll #89) J. K. Thorne & Son Payroll #90) J. K. Thorne & Son Payroll #91) J. K. Thorne & Son Payroll #92) J. K. Thorne & Son Payroll #93) J. K. Thorne & Son Payroll #94) J. K. Thorne & Son Payroll #95) J. K. Thorne & Son Payroll #96) J. K. Thorne & Son Payroll #97) J. K. Thorne & Son Payroll #98) J. K. Thorne & Son Payroll #99) J. K. Thorne & Son Payroll #100) J. K. Thorne & Son	3-5-54	6-9-54	2,766.19	2,766.19	Spec. Rd.
Lakeshore Sewage Pumping Sta. No. 3 (Fence Around Transformer Pad) Anchor Post Prod.	3-24-54	4-30-54	306.00	306.00	General
Pine Lake Pumping Sta. & Related Appurtenances (Construction) Hart & Hynding, Inc.	4-16-54	12%	29,769.00	3,375.00	General
Municipal Asphalt Plant (Construc- tion) Hart & Hynding, Inc.	5-5-54	5%	407,101.00	18,020.00	Spec. Rd.
Parkmerced Pumping Station (Electrical Services & Misc. Work) Cimino Electric Co.	5-19-54	40%	2,807.00	0	General
Jones St. Tank (Fire Dept. A.W.S.S.) (Repairing, Waterproofing & Painting) Atlas Painting Co., Inc.	6-2-54	0%	6,155.00	0	General
El Camino Del Mar Test Borings P & Z Co.	6-2-54	0%	462.40	0	Spec. Rd.
Fitzgerald Ave. & Griffith St. (Test Borings) J. N. Pitcher Co.	6-16-54	0%	150.00	0	General
Islais Creek & 4th St. Bridges (Repairs) Hart & Hynding, Inc.	6-16-54	0%	3,693.00	0	Spec. Rd.
Total Awarded and Expended During Fiscal Year			\$695,160.07	\$363,302.63	

BUREAU OF ARCHITECTURE

REPORT OF ACTIVITIES

Showing all work completed, contracts under construction,
and work under preparation - July 1, 1953 to June 30, 1954

WORK COMPLETED

Board of Education

New School Building Construction

Patrick Henry Elementary School Phase I	\$ 728,154.00
Bret Harte Elementary School	1,223,359.00
Sunnydale Elementary School	1,170,276.00
Twin Peaks Elementary School	439,444.00
City College Library & Classroom	2,326,800.00
Douglas Elementary School	486,121.00
Burnett Elementary School	602,825.00
Lakeside Elementary School	784,118.00
Girls' High School Addition	782,434.00

Test Borings & Soil Analyses

Diamond Heights Junior High School Site	1,980.00
Ridgepoint No. 2 Elementary School Site	1,950.00
Luther Burbank Junior High School Site	1,925.50

Miscellaneous Alterations

City College (Refrigeration)	63,000.00
Samuel Gompers (Part I - Conversion)	126,600.00
George Washington High School (Windows)	24,200.00
Commerce Building (Conversion to Administrative)	79,493.00
Grant Elementary School (Remodeling)	36,962.00
Parkside Elementary School (Remodeling)	53,035.00
Bryant Elementary School (Remodeling)	39,334.00
Kate Kennedy Elementary School (Remodeling)	37,698.00
Samuel Gompers (Part II - Conversion)	44,642.00
Abraham Lincoln High School (Frame Classrooms)	27,864.00
McKinley Elementary School (Remodeling)	34,592.00
Parkside Elementary School (Relocation of Frame Classrooms)	11,882.00

Miscellaneous Alterations (Continued)

Lafayette Elementary School (Roofing)	\$ 5,811.00
Lawton Elementary School to Noriega Home School (Relocation of Frame Classrooms)	24,589.00
Various Schools (Alter Heating Plants)	141,000.00
Polytechnic High School (Principal's Office)	8,814.00
J. A. O'Connell (Radio Studio & Partitions)	27,849.00
Polytechnic High School (New Home Economics Room)	21,793.00
J. A. O'Connell (Dust Collector System)	26,486.00
Commerce High School (Penthouses)	2,757.00
Yerba Buena Elementary School (Roofing Annex)	2,772.00
Abraham Lincoln High School (Repair Hardwood Floors)	329.00
San Miguel Elementary School (Portable Classrooms)	14,492.00

Resilient Flooring

Commodore Stockton Elementary School	11,111.00
Candlestick Cove Elementary School	1,581.00
Hunters Point No. 1 and Ridgepoint No. 1 and 2 Elementary Schools	2,483.00
I. M. Scott Elementary School	1,533.00
Horace Mann & James Lick Elementary Schools	15,884.00
S. F. Continuation	6,758.00

Yard Paving

George Washington High School	35,300.80
Pacific Heights Elementary School	10,668.00
Jean Parker Elementary School	9,183.00
Sherman Elementary School	21,891.00
LeConte Elementary School	17,435.00
Edison Elementary School	19,435.00
Marshall Elementary School	7,985.00
Columbus Elementary School	11,805.00
Geary Elementary School	23,800.00
S. F. Continuation	15,690.00
Raphael Weill Elementary School	15,717.00
Sarah Cooper	13,944.00
Candlestick Cove Elementary School	3,729.00
Dudley Stone Elementary School	23,835.00
Cabrillo Elementary School	27,750.00
Lawton Elementary School	26,742.00

Interior Painting		
Roosevelt Junior High School	\$	16,090.00
Portola Junior High School		19,821.00
Lafayette Elementary School		1,549.00
Jefferson Elementary School		14,433.00
Edison Elementary School		16,741.00
Candlestick Cove Elementary School		4,878.00
Ulloa Elementary School		4,750.00
Lake Merced Elementary School		5,877.00
Francisco Elementary School		17,471.00
Ridgepoint No. 1 Elementary School		3,377.00
Ridgepoint No. 2 Elementary School		3,380.00
Total Board of Education Work Completed	\$	9,838,007.30

Department of Public Health

San Francisco Hospital		
General Roof Repairs for Ward Buildings	\$	10,160.00
New Electric Passenger Elevator		
Ward Building No. 2		39,878.00
Interior Washing and Cleaning		
Ward Building No. 30		3,690.00
Floor Repairs, Isolation Nurses Home		1,742.00
Laguna Honda Home		
Alter Cadaver Boxes		5,511.00
Sunset Health Center Building		77,874.00
Total Public Health Work Completed	\$	138,855.00

Fire Department

New Construction		
Park Merced Fire House	\$	194,711.00
Alterations		
Engine No. 42 Repairs		4,886.00
Engine No. 43 Repairs		3,008.00
Central Fire Alarm Station Interior Repairs		6,411.00
Central Fire Alarm Station Exterior Repairs		4,438.00
Reroofing Pumping Station No. 1		2,509.00
Total Fire Department Work Completed	\$	215,963.00

Civic Center

City Hall

Treasurer's Office Acoustical Tile Ceiling	\$	2,710.00
Interior Painting of Stairways		4,240.00
Alterations to Court Room No. 481		4,288.00
Rehanging & Installation of Lighting		
Fixtures, Supervisors Chambers		8,219.00

Civic Auditorium

Alterations to 2nd Floor Toilets		9,080.00
Asphalt Tile in Basement Corridor		1,181.00
Interior Painting of 2nd and 4th Floor		
Corridors		5,720.00
Repair, Sand, & Refinish Floor of Main		
Half and Stage		2,755.00

Total Civic Center Work Completed	\$	38,193.00
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Public Library

New Construction

Marina Branch Library	\$	154,400.00
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Alterations

Potrero Library Alterations		1,947.00
Main Library Flooring		5,103.00
Main Library Roof Repairs		5,936.00
Main Library Exterior Painting		6,496.00

Total Public Library Work Completed	\$	173,882.00
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Miscellaneous

Steinhart Aquarium

Temporary Shoring	\$	9,415.00
Paint Swamp Room and Foyer		1,845.00

County Jail, San Mateo, Repainting of
Steel Water Tank

785.00

Central Shop No. 1, Roof Repairs		1,424.00
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Pumping Station No. 1, Reroofing		2,509.00
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Youth Guidance Center, Replace Security Screens		2,987.00
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Total Miscellaneous Work Completed	\$	18,965.00
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TOTAL ALL WORK COMPLETED		\$10,423,865.30
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CONTRACTS UNDER CONSTRUCTION

Board of Education		Percent Completed
New School Building Construction		
Sunset Junior High School	\$ 2,851,615.00	90
San Miguel Elementary School	737,000.00	95
Mark Twain Elementary School	711,089.00	90
Ridgepoint No. 3 Elementary School	902,717.00	40
Starr King Elementary School	601,956.00	30
Silver Avenue Elementary School	856,477.00	10
City College Cafeteria	658,978.00	5
Columbia Park Elementary School	282,348.00	15
Funston & Santiago Junior High School	2,967,928.00	1
Miscellaneous Alterations		
Administration Building (Conversion of Locker Rooms)	24,411.00	0
Administration Building (Reroof Nourse Auditorium)	4,436.00	0
Abraham Lincoln High School (Alterations)	24,100.00	0
Alta Vista High School Jr. (Exterior Reconstruction)	34,651.00	0
Balboa High School (Cafeteria Alterations)	19,089.00	0
Benjamin Franklin Junior High School (Reroof Girls' Gymnasium)	4,379.00	0
City College (Alterations, Science Bldg.)	26,581.00	0
Commodore Stockton Elementary (Roofing)	4,791.00	0
Various Schools (Alter Heating Plants)	126,189.00	0
Mission High School (Cafeteria Alterations)	28,167.00	0
Sunshine Elementary School (Reroofing)	9,200.00	0
Continuation High School (Exterior Reconstruction)	44,613.00	0
Fairmount Elementary School (Reroofing)	10,136.00	0
Monroe Elementary School (Acoustical Treatment)	19,989.00	0
Monroe Elementary School (Electrical Work)	16,300.00	0
Guadalupe Elementary School (Acoustical Treatment)	12,555.00	0

Percent
Completed

Miscellaneous Alterations (Continued)		
Guadalupe Elementary School (Electrical Work)	\$ 11,237.00	0
John A. O'Connell Trade School (Radio Tower)	14,569.00	0
Benjamin Franklin Jr. High School (Reroof Girls' Gymnasium)	4,379.00	0
Edison Elementary School (Roof Repairs)	9,509.00	0
Polytechnic High School (Foundry Conversion)	62,100.00	0
Polytechnic High School (Exterior Reconstruction)	86,500.00	0
Portola Junior High School (Cafeteria Alterations)	38,769.00	0
Sunshine Elementary School (Additions and Alterations)	45,980.00	0
Resilient Flooring		
James Denman Junior High School	3,493.00	0
San Miguel Elementary School	5,393.00	0
Hard Repaving		
Balboa High School	13,377.00	0
Visitacion Valley Elementary School	22,287.00	0
Bryant Elementary School	13,341.00	0
Parkside Elementary School	23,363.00	0
Spring Valley Elementary School	7,142.00	0
Interior or Exterior Painting		
Galileo High School	46,212.00	0
Marshall Elementary School	12,930.00	0
Emerson Elementary School	20,400.00	0
Sunshine Elementary School	15,771.00	0
Parkside Elementary School	12,600.00	0
Frank McCoppin Elementary School	8,990.00	0
Sutro Elementary School	7,400.00	0
Benjamin Franklin Junior High School	5,820.00	0
Madison Elementary School	9,360.00	0
Patrick Henry Elementary School	4,341.00	0
San Miguel Elementary School	4,818.00	0
Everett Junior High School	21,564.00	0
Sanchez Elementary School	11,704.00	0
Total Board of Education Work Under Construction		
	\$11,523,144.00	

Fire Department		Percent Completed
New Construction		
Project 1A, Engine House No. 29	\$ 158,870.00	0
Project 1, Engine House No. 10		
Training College and Drill Tower	521,448.00	80
Reconstruction		
Project 106, Engine House No. 36	8,832.00	0
Total Fire Department Work Under Construction		
	\$ 689,150.00	

Museum

M. H. deYoung Museum		
General Construction of Additions and Alterations		
	\$ 229,130.00	10

Department of Public Health

San Francisco Hospital		
New Fire Escape & Standpipe	\$ 7,472.00	0
Repair & Paint Exterior Windows (Part I)	23,540.00	0
Replace Kitchen Floors and Miscellaneous Repairs	38,621.00	0
Fire Doors and Partitions	6,627.00	0
Fire Sprinkler System	19,687.00	0
Physiotherapy Additions and Alterations	34,572.00	0
Main Hot Water Line Replacement (Part I)	15,941.00	50
Main Hot Water Line Replacement (Part II)	6,287.00	0
Alter 4th Floor Nursery, Maternity Building	12,616.00	40
New Elevators (Wards 10, 30, & 40)	106,499.00	0
Boiler Room Doors	2,858.00	15
Surgical Suite (Part II)	98,945.00	90
Laguna Honda Home		
New Boiler	167,973.00	75
Sunset Health Center		
Additional Lettering	50.00	0
Total Public Health Work Under Construction		
	\$ 541,688.00	

APPENDIX II

II-8

Percent
Completed

Civic Center

Percent
Completed

City Hall

Waterproofing Interior Light
Courts and Skylights

\$ 2,288.00 0

Miscellaneous

County Jail No. 1

Felon Wing Plumbing

\$ 3,906.00 5

TOTAL ALL WORK UNDER CONSTRUCTION

\$12,989,306.00

WORK UNDER PREPARATION

Board of Education

New School Buildings

Plans & Specifications Completed

Commodore Stockton Elementary School
(Angus McSweeney)

\$ 494,422.00

Working Drawing Stage

Hillcrest Elementary School (Add)
(Day)

90,000.00

Lake Merced Elementary School
(Reid)

1,041,900.00

Sunnydale Elementary School
(Ambrose-Spencer)

285,000.00

Ridgepoint No. 2 Elementary School
(Gloe)

916,000.00

Luther Burbank Junior High School
(Dailey)

2,668,000.00

Preliminary Drawing Stage

Silver & Thomas Avenue Junior High School
(Aleck Wilson)

2,800,000.00

Miscellaneous Alterations

Monroe Elementary School (Roof Alterations and Repairs)	\$ 10,000.00
Jean Parker Elementary School (Roofing Repairs)	5,000.00
Jean Parker Elementary School (Penthouse & Miscellaneous Repairs)	10,000.00
Galileo High School (Roofing)	20,000.00
City College (Roofing)	15,000.00
Grattan Elementary School (Roofing)	10,000.00
Alamo Elementary School (Exterior Wall Repairs & Waterproofing)	50,000.00
Polytechnic High School (Windows)	12,000.00
Patrick Henry Elementary School Addition (Phase II)	140,000.00
Bayview Elementary School (Exterior Reconstruction)	30,000.00
West Alemany Elementary School (New Temporary School)	30,000.00
Yerba Buena Elementary School (Exterior Reconstruction)	20,000.00
James Lick Junior High School (Exterior Reconstruction)	15,000.00
Alta Vista Elementary School (Reconstruction)	12,000.00

Projects Which Require Further Classification
and Coordination Prior to Scheduling

Bret Harte Elementary School (Phase II)	18,000.00
Raphael Weill Elementary School (Interior Painting)	}
Redding Elementary School (Interior Painting)	
Washington Irving Elementary School (Interior Painting)	
Jean Parker Elementary School (Interior Painting)	
Sarah Cooper Elementary School (Interior Painting)	
Andrew Jackson Elementary School (Interior Painting)	
I. M. Scott Elementary School (Interior & Exterior Painting)	82,000.00

Projects Which Require Further Classification
and Coordination Prior to Scheduling (Cont'd)

Golden Gate Elementary School	}
(Resilient Flooring)	
Sarah Cooper Elementary School	
(Resilient Flooring)	}

Total Amount of Work Under Preparation
for the Board of Education

\$ 8,774,322.00

Department of Public Health

San Francisco Hospital

Emergency Repairs Fire Road	\$	56,000.00
Emergency Repairs Ward Kitchens		93,000.00
Exterior Painting & Sash Repair, Part II		23,000.00
Repair roofs, gutters, and downspouts		12,000.00
Convert Laundry Extractor		1,800.00
Provide Fire Doors		3,000.00
Complete Two Elevators TB Wing		27,200.00
Kitchen Dishwashing		19,600.00
Delivery and Labor Room Floors		10,000.00
Install New Rotating Oven		19,500.00
Fire Protection Projects		75,000.00
Remodel Emergency Ward		16,000.00
Clean Buildings 10, 20, and 40		11,000.00
Drawings & Estimates for Future Projects		20,000.00

Laguna Honda Home

Kitchen		265,520.00
Waterproof Exterior Walls and Repair Drains		10,000.00
Install Fire Doors and Enclosures		59,820.00

Total Amount of Work Under Preparation
For Department of Public Health

\$ 722,440.00

Fire Department

New Construction

Engine No. 26, Project 6 (Grading)	\$	13,000.00
Engine No. 26, Project 6 (New Fire House)		325,000.00
Engine No. 34, Project 4 (New Fire House)		275,000.00

New Construction (Continued)

Engine No. 11, Project 9 (New Fire House)	\$ 190,000.00
Engine No. 40, Project 7 (New Fire House)	270,000.00

Reconstruction

Engine No. 39, Project 104	86,000.00
Engine No. 5, Project 103	98,000.00
Engine No. 24, Project 122	18,000.00
Engine No. 18, Project 113	40,000.00
Engine No. 48, Project 125	16,000.00
Engine No. 46, Project 128	20,000.00

Projects Which Require Further Classification
and Coordination Prior to Scheduling

New Projects

Engine No. 13, Project 3	}	1,080,000.00
Engine No. 14, Project 19		
Engine No. 38, Project 20		
Engine No. 45, Project 117		
Engine No. 12, Project 102		

Reconstruction Projects

Engine No. 3, Project 110	}	215,000.00
Engine No. 8, Project 108		
Engine No. 41, Project 109		
Engine No. 15, Project 107		
Engine No. 16, Project 126		
Engine No. 19, Project 114	}	

Total Amount of Work Under Preparation
For Fire Department

\$ 2,646,000.00

Public Library

New Construction

North Beach Branch Library	\$ 165,500.00
Outer Sunset Branch Library	154,500.00

Total Amount of Work Under Preparation
For Public Library

\$ 320,000.00

APPENDIX II

II-12

Civic Center

City Hall		
Warrant Bureau, Traffic Fines	\$	10,879.00
Bureau of Engineering, Renovate		
Women's Rest Room		3,450.00

Civic Auditorium		
Real Estate Department, Furnish and Install		
Asphalt Tile, 2nd Floor Corridors		6,250.00

Total Amount of Work Under Preparation		
For Civic Center	\$	20,579.00

Miscellaneous

Hall of Justice, Remodel Quarters, Dept. 11	\$	5,881.00
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Youth Guidance Center		
Security Sound System		12,500.00
Replace Window Glass, Buildings B-2, 3, 4		3,350.00
Cottage C-1, Interior Remodeling		3,000.00

Disaster Council Ground Observer Post		
Park Merced Building 11		3,000.00

Finance & Records, 150 Otis Street		
Alter 4th and 5th Floors		13,000.00
Drawings and Estimates for General Repairs		2,500.00

Public Welfare, 150 Otis Street		
Remodel 1st and 2nd Floors		40,000.00

Steinhart Aquarium		
Survey and Preparation of Reconstruction		
Program		16,000.00

Total Amount of Work Under Preparation		
For Miscellaneous Departments	\$	99,231.00

TOTAL AMOUNT OF ALL WORK UNDER PREPARATION		\$12,582,572.00
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GRAND TOTAL OF ALL WORK COMPLETED, UNDER		
CONSTRUCTION, AND UNDER PREPARATION		\$35,995,743.30

